July/August 1988

RESET

Magazine

The ST Almanac

Volume 1, Number 4

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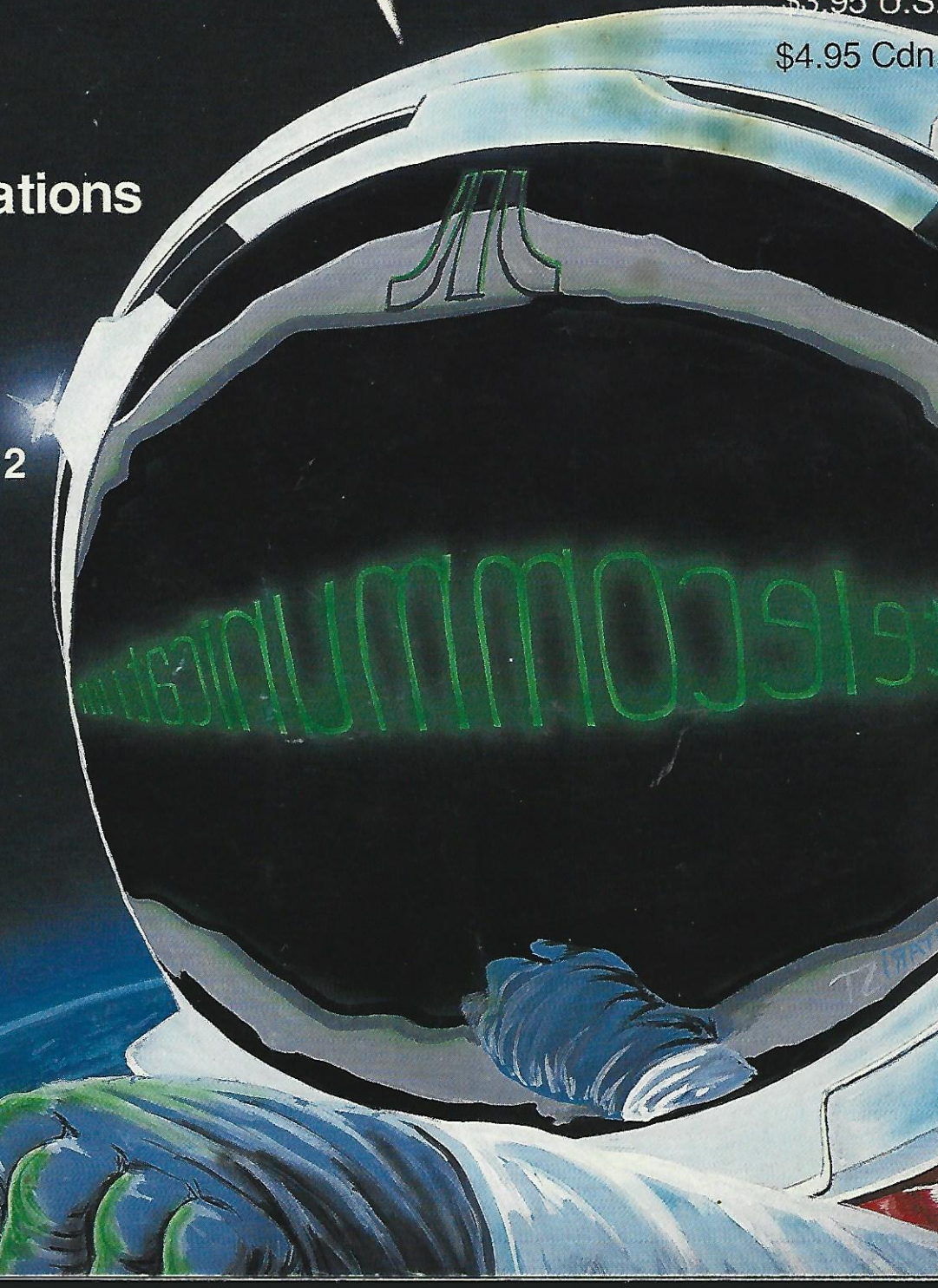
Exploring Telecommunications

COMDEX '88

How To Draw with Spectrum 512

Supercharging Easy-Draw

Reviews and Articles on How to USE your Atari ST



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Despite a sleek and compact exterior, the ICD ST Hard Drive System is packed full of overwhelming enhancements. Like an internal clock that tags each file with up-to-the-minute time and date information. Not to mention expansion capabilities that welcome the connection of up to six SCSI devices and daisy-chaining Atari's DMA Bus (ACSI). It's available in more memory capacities than you can imagine. With storage ranging from 20 megabyte systems up to 280 megabytes. And, there's dual drives too, that double your protection and double your confidence. *No stress.*

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RESET

The ST Almanac

July/August 1988
Volume 1, Number 4

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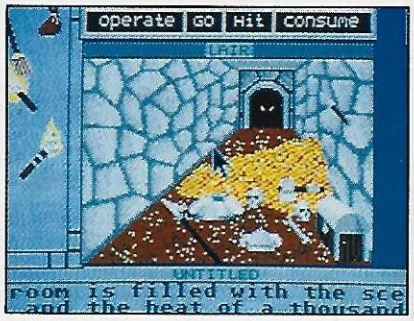

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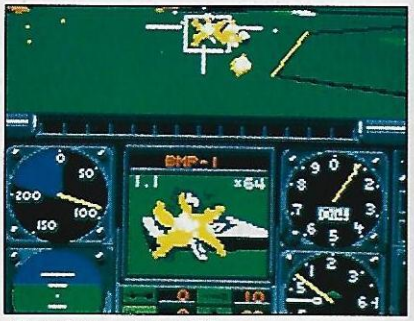

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Our feature section this issue will take you into the world of telecommunications. For those who have not yet taken the plunge into this popular, but sometimes intimidating area of computer useage, we have several articles designed to help you understand and get started. For the more experienced "telecommunicators" we offer some comments, suggestions, and tips that focus on getting the most out of your on-line time.

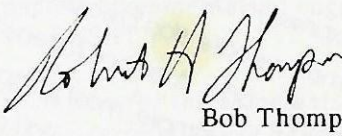
This issue we introduce a "Publisher's Comment" where our Publisher gets to expound on the state of the computer industry, specifically with the ST in mind.

Our news column is undergoing some changes, and as a result we have replaced it this issue with a Comdex report, and other individual news items and update reports.

By popular demand we are continuing our "How to Draw" series, but this issue we concentrate on using some of the more confusing features found using Spectrum 512. An article on Supercharged Easy Draw, and in depth reviews of Gunship, Breach, and Shadowgate round out the features of this issue.

We really do look at your comments on the reader survey cards, and many of the changes reflected in this issue of RESET are as a result of reader comments. We have incorporated free product information into the survey card for your convenience: just circle the corresponding number in the Free Product Information box. Please take the time to fill in and return the reader survey card so that we can take your comments, criticisms, and ideas into consideration.

All in all, this issue of RESET will provide you with some entertaining reading over the hot summer days. Remeber: if your local newsstand or store doesn't carry RESET, ask for it! ■



Bob Thompson
Editor-In-Chief
RESET Magazine

Next Issue:
The feature section in the September/October issue will be Word Processing.

The Front Cover

This issue's cover reflects our Feature Section: *"Exploring Telecommunications"*.

The base cover artwork is a painting created by Tim Wright. The RESET logo, and all the text was merged with the painting at the filmwork stage.

Production of RESET Magazine

The staff of RESET Magazine use ST computers to produce the magazine. The raw text is generated by authors on various ST word processors and submitted for approval. The text is electronically edited, then converted into a useable format. The pages are then electronically created using the *Publishing Partner*, from Softlogik and *Publisher ST* from Timeworks. The files are then printed on a Postscipt laser printer, proofed, then fixed onto artboards. Any conventional artwork is pasted on the final artwork. The boards are then marked up with printers' instructions, and sent out for filmwork in preparation for offset printing on a web press.

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The Publisher's Comment

How many times have we heard all about Atari's mistakes? How many predictions of doom & gloom for Atari have been permeating throughout the industry? There seems to be an over abundance of criticism about Atari, its policies, and its lack of support for developers and dealers. And because Canada is so close to the United States, many of the opinions, attitudes and feelings expressed about Atari in the US has a great influence on those in the Canadian market. However, most people don't realize how different the Canadian Atari market is compared to that of the US. In Canada, Atari has taken steps to avoid problems among its dealerships and developers. For example, most people don't know that when the MEGA ST's were shipping in Canada, the United States had to wait 6 months before they saw their first one (although not all MEGA computers in Canada are equipped with the blitter chip). The Atari laser, PC1, and PC2 were available 6 months to one year earlier in Canada. Some attribute this to the fact that the Canadian market is used to test products before their release in the US. However, a product such as the PC2, which has been tested and proven to be successful in Canada since its release in January, is still not available in the US. Perhaps this could be attributed to the dealership networks in Canada as compared to that of the US. In Canada, Atari has done well in signing up Value-Added Resellers (VARs) dealerships. These VAR dealerships specialize in providing computer solutions for business applications. For example, If a businessman needs desktop publishing capabilities at the office, a VAR would put together a package consisting of hardware & software best suited for this particular application as well as providing installation and training for the customer. By offering various packages for desktop publishing, Computer Aided Design, and other business applications, Atari Canada has been able to encourage the enlisting of more Atari VARs. I believe that much of the problem of Atari's image as being strictly a consumer's machine has to do with the fact that the majority of the Atari dealerships are consumer oriented. Regardless of how good a computer dealer may be, if he is selling game machines and his customers are hobbyists and enthusiasts, he will not be able to attract the type of customers who would be searching for serious business applications to be used in an office environment. However, with the ability to market its machines through dealerships who are specifically business oriented, Atari will be able to earn the respect of the business world and shed the image of the game machine company which has haunted Atari for the longest time.

Hytham Khalil,
Publisher.

Mailbag

Mailbag is provided as a forum for RESET readers to voice their opinions, concerns and suggestions concerning RESET Magazine, Atari computers, hardware, software, or anything else that may be of benefit to our readers. Please send your letters to:

MAILBAG
c/o RESET Magazine
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Premiere Issue

Several readers have inquired about the availability of Volume 1, Number 1 of RESET (Summer 1987) as a back issue. A recent article in Atari Explorer Magazine also stated that we had that issue available.

Unfortunately, that issue of RESET is currently sold out. If demand is sufficient, we will consider reprinting it; watch these pages for such an announcement. We are now taking orders for back issues number 2 and 3, which are both available in limited quantities (see advertisement elsewhere in this issue--Ed.)

Canadian, Eh?

Dear RESET,

Congratulations on creating a Canadian magazine for ST users.

Are you thinking of putting out a disk issue, such as your competition in the U.S.? Just think of the possibilities--a program to set up hockey pools and drafts, a recipe database for Cod Tongue Chowder, Tortiere, Maple Sugar Candy, Nanaimo bars, Hickory-smoked B.C. salmon, etc., a Geography-Locator game to help little Canucks learn map co-ordinates for meccas like Osoyoos, Gravelbourg or Joe batt's Arm! Or, better yet, a dictionary to sort out those translations between our two foundering languages (ie. GAS = GAZ).

That's all for now... best of luck, eh?

Terry Glecoff,
North vancouver, BC.

Yes, we do have plans for a disk supplement to RESET. While we are working on such an endeavour, we have no precise date as of yet. Watch for a RESET disk late this year or in early 1989--because when it does arrive, it will be the best of its kind.

Survey Feedback

Dear RESET,

When I saw that spectacular article on Publishing Partner in the first issue of RESET, I became an enthusiastic supporter of your magazine. (Yes, I've taken out a subscription.)

Because I'd love to see you succeed in your effort to expand and penetrate the international market, I tried to help out in my own little way by being extremely conscientious in filling out your survey card.

I've written some of my reactions below. Most of the comments, I suppose, are negative, but not because I was disappointed in RESET--I simply tried to focus on how to make the magazine even better. Everything, I promise you, is offered in a spirit of genuinely constructive criticism.

David Schreiber,
Toronto, Ontario.

(David also went on to include several pages of comments and suggestions for RESET.)

Thank you for the comments, David. We certainly have benefitted from your suggestions. We carefully read and consider each and every survey card and letter; and, based on this feedback, we decide upon the directions for the magazine to take. So keep those survey cards coming!

Videokey Support!

Dear RESET,

As the frustrated owner of a 1040ST unable to videotape my creations, I was thrilled when I received a call from Practical Solutions, asking if I was still interested in the Videokey converter. My overwhelming "YES" still bellowing over the phone lines, I received my Videokey a week later.

I promptly hooked it up, and after a minute adjustment, per the included instructions, I was in business. Most colours looked fine, but I had a problem of over-saturation with certain blues on my composite monitor. The problem looked worse upon viewing the videotape back.

A call to P.S. returned me a call from one of their engineers. I explained my

continued on page 6

Comdex '88: Atlanta

The eighth annual Spring COMputer Dealer's EXhibition was held from May 9th through May 12th. As is the norm, Atari Corp. was in attendance. Unlike the last Comdex, however, Atari did not unveil a plethora of new products. Rather, the focus was on marketing and third party products aimed primarily at specialized business markets.

Atari Corp. Announcements

In an attempt to dispell its video game image, Atari has separated its computer division from its other operations and renamed it **Atari Computer**. Atari Computer's marketing strategies seem to be aimed at specific ST markets ("niche markets") such as, Desktop Publishing, MIDI (music), and CAD (Computed Aided Design).

Atari Desktop Publishing Systems

Atari featured their cost-effective ST desktop publishing systems in a big way this Comdex. A typical configuration included a **Mega 4**, monochrome monitor, 20-meg hard drive, **SLM804** laser printer, and high-end DTP software at a price in the $5000 to $6000 range. Atari was quick to "challenge competitors on performance and price"-particularly DTP systems based on IBM AT clone and Macintosh SE computers.

Atari PC-Compatibles

The previously announced **PC4** computer, a 12 Mhz, 0 wait state 80286 AT compatible, was being shown as a production model. This machine will become available later this year.

Atari CD ROM/Audio Player

The long-awaited **CD ROM** player was shown as a final production model. Developer's models of the unit will be shipped shortly, so you can expect to see the unit by early fall.

TOS ROM Upgrades

While there was no mention of 520 and 1040ST blitter upgrades, Atari did make an announcement regarding TOS ROM upgrades. Apparently, the ROMS in the Mega were just an interim revision to provide support for the blitter chip. Atari is currently working on a major ROM upgrade that will include bug fixes and enhancements--particularly speed. Some other improvements will be; a better file selector, better software compatibility (than the Mega ROMS) and a CTRL-ALT-DELETE soft reset. Look for these ROMS to become available this fall.

Surprisingly, Atari did not show the Abaq, their transputer-based machine, nor did they show their eagerly anticipated 68030 based UNIX machines. Instead, Atari chose to feature products and packages that are either currently available or just about to be released. Atari also featured many third-party products in their booth.

Desktop Publishing/Graphics

Publishing Partner Professional was shown in its final beta version. The program is slated to be released by June 30th. It should be available by the time you read this.

ISD Marketing were showing their impressive **Calamus** DTP Package (available in mid-to-late July). A major hit at the show was the fact that they were running Calamus on a 19" monochrome monitor with a 1280 X 960 display. To drive the monitor, a **Moniterm Viking**, ISD had a video card plugged into the Mega 4's expansion bus and a patched TOS (on disk) to drive the unit. The interface reportedly will also drive colour monitors.

Timeworks presented their latest ST offering, **Publisher ST**, plus a series of Art Portfolios for use with Publisher.

The focus was on marketing and third party products aimed primarily at specialized business markets.

Liz and Kevin Mitchell of **Migraph** were busy demonstrating their new accessory for Easy Draw, **EZ-Tools**. EZ-Tools allows Easy Draw to rotate objects, enter Polytext (text which can be modified and rotated, etc.), convert figures to polytext, create grids and numerically size and locate figures. They were also showing their new **Scan Art Libraries**, a collection of .IMG images for use with Supercharged Easy Draw or with some of the desktop publishing packages. Last, but not least, Migraph had their soon-to-be- released **Scanner/Printer**. The $995 unit plugs into the ST's parallel port and will scan or print images up to 200 dots per inch. Printing will be through a GDOS driver for the unit and it will scan images in .IMG format.

Navarone Industries had their **ST Scan Image Scanner** on display. The scanner is a Canon IX-12F,

continued on page 14

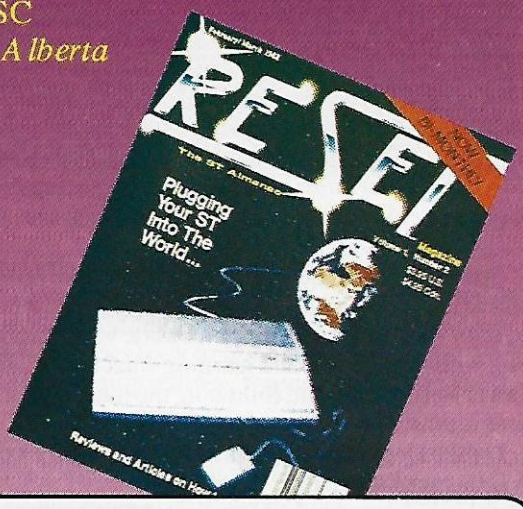
RESET Magazine

The ST Almanac

Readers' Choice as #1 overall

"If the RESET lads keep up the standards, we could well see a redefiniton of what specialty magazines are all about."

CAST.RSC
Calgary, Alberta



Canada's #1 ST Magazine!

RESET sets new standards for Atari ST magazines - by specializing in in-depth "How To" articles, **RESET** guides its readers through the different aspects of ST computing, with the emphasis on **USING** the Atari ST. Each issue of **RESET** is filled with useful articles, tutorials, tips and hints and comparision charts, covering a wide range of topics, and making **RESET** an invaluable tool for the ST user.

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"Now there is an alternative"

USING SPECTRUM 512

Jim Turner

In our last issue we concluded our series on How To Draw using Degas Elite by Hooman Simyar. Reader response was so positive that we asked our own art director, Jim Turner, if he would write a short tutorial in the same vein using his paint program of choice, Spectrum 512 from Antic Software. Ed.

Spectrum 512 is definitely not an intuitive program. In order to learn to use this excellent art program, you must be prepared to spend time with your manual open beside your computer, just playing with the features and learning what they really do. The manual is well written and following the tutorials for the different features is time well spent.

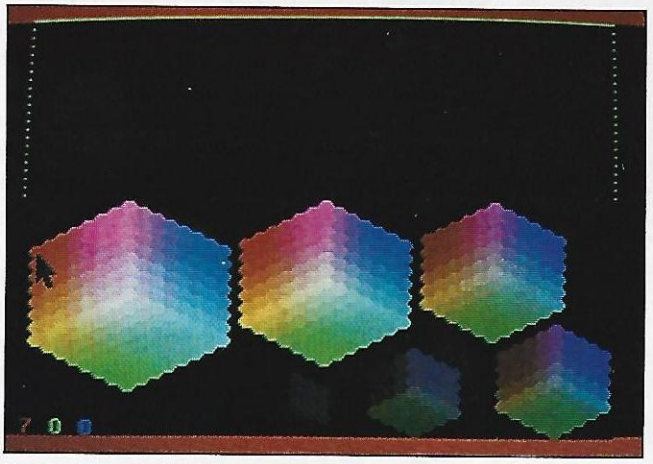
Unlike Degas Elite, this is not a program for knocking off a quick little text slide or org. chart. For one thing, Spectrum 512 has no TEXT features. Some of the graphic primitives, like boxes and filled polygons, are also missing. Let me assure you though, once you get to know this beauty, you'll hardly even notice these little omissions.

On With The Show

I thought I'd start with an image that demonstrates one of the most exciting features, and one of the hardest to use--gradient fill.

This graphic tool will fill a defined area with several colours and blending them smoothly using any of three different techniques. This is great for anything requiring transitional colouring such as glowing objects or letters (hand drawn) or multi-coloured images like sunsets. Let's try one and see how it works in practice.

Before we start, make certain to have your manual handy in case I mention something that seems a little vague or use a term with which you are not familiar.



Ready to pick your colours for the custom palette

First...

Define the area in which you want you gradient fill to appear. We want the whole screen for this image so select ''Block'' from your main menu, then select PIC->PIC from the sub menu. Hold down the CONTROL key and drag a box over the whole screen. After a one or two second pause a green dotted box will appear defining your area. Your ''Custom'' palette will be showing in the boarders of your screen. Hold down the ALTERNATE key and move the cursor into the bottom half of the screen. Touch the right mouse button. You are now in edit mode for your CUSTOM pallette. Press ESC to delete the current pallette, then, using the right button, choose all the colours, in blending order, that you want to appear in your sunset. Ten or twelve shades ranging from dark blue through red and yellow to

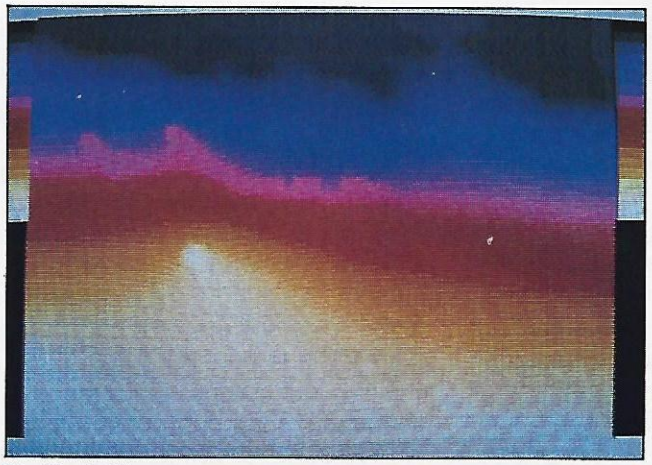
white should do nicely. *(see sidebar for colour specs used in Jim's picture Ed.)*

Once you've chosen all your colours, hit RETURN to exit pallette edit mode. We're now ready to start painting.

Select BRUSH mode from the main menu and a medium

The "wisps" are ready for blending

sized round brush from the sub-menu. Move the cursor to the very left edge of the screen beside the top colour in your palette. Touch the right button. Your cursor/brush and the top and bottom



The blended image

borders of the screen should change to this colour and you can now PAINT exactly as in Degas Elite. Put in some wisps of colour across the top of the painting and touch the ENTER key once you've finished. This is not the RETURN key but the ENTER key on the numeric key pad at the right.

In the same manner, but at the lower edge of your painting, put in a few wisps of your lightest colour, this should be at the bottom of your palette. Don't forget to touch ENTER again once you're done. This will set the wisps as constants that Spectrum will fill between. Now, in order to add some dramatic clouds to your image, select a colour from somewhere near the middle of your palette and paint in a few wisps and squiggles near the middle. Doesn't look like much yet, does it? Well here's where the fun starts.

Blending

Press the DECIMAL(.) key on the numeric key pad. Your screen will suddenly change to bizarre colours, mostly reds and oranges. Believe it or not, Spectrum is blending your colours. You won't see anything happening on you screen but it's blending none the less. Wait about a minute then press any key and you'll see a slow building of your new blended image. The proper colours don't appear until this build is done but if you've followed along, you'll find the wait is worth it. If the blending isn't quite done or if you'd like to see what it would look like with more

The complete "Sunset" Image

blending, touch DECIMAL again, wait, hit a key, et voila.

Spectrum has a feature that can speed up the blending process. But you tend to lose control since it blends everything in large blocks and then goes back to smooth out the blocks. For this reason you really can't stop partway through since everything will look blocky.

To use this feature simply hold down the ALTERNATE key when you press the DECIMAL key to start blending. The screen border will turn blue as it blends the large blocks. Once Spectrum is finished with the blocks the border returns to black. After a little wait and a key press, your blending will be much further along than with the DECIMAL key alone.

Try another sunset with different colours. Put in the sun in pure white. Blend for a while, then add colours to the mix. Each technique gives a different effect and each can be quite impressive. ■

Jim Turner has been an avid computerphile for nearly a decade. His interest has been primarily in the area of computer generated graphics which is an extension of his fascination with visual arts. He has worked in the graphics field for a number of years and is RESET's art director.

COLOUR SPECS.	
001	704
002	702
003	700
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207	774
407	776
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706	

PUBLIC BEAT

Chris Karson

Vanterm Version 2
Vanguard Datasystems

Uniterm Version 2.0c
Simon Poole

DC Formatter Version 2.21
DC Formatter Desk Accessory Version 1.1
Double Click Software

Solitaire Version 2
David S. Lay

Public Beat is a regular column featuring the latest in public domain and user-supported software. PD software is exactly that--software intended for the public. It is usually found in one of two forms: 'Freeware' or 'Shareware'. The first being without cost and freely encouraged to be distributed. The second involves a small contribution to the author in consideration of their time and effort invested in the program.

Software reviewed in Public Beat can be acquired through many user clubs, public BBS systems and information services like Compuserve and GEnie. If you have released a program into the public domain and would like to see it appear in Public Beat, please send it to RESET c/o Chris Karson.

Uniterm

Since I took over this column from Craig Tremblay (who has since dropped out of the ST realm), I have been helped in my quest for quality PD software. One source is, of course, CompuServe (commonly known as Compu$pend). Another source has been the University BitNet. The BitNet is a link-up of universities around the world, and the Atari SIG on the BitNet is very active. Unfortunately, BitNet is not available to everyone--just students and faculty from participating institutions. Simon Poole, from Switzerland, is an active member in the forum, and he posts new versions of Uniterm regularly there.

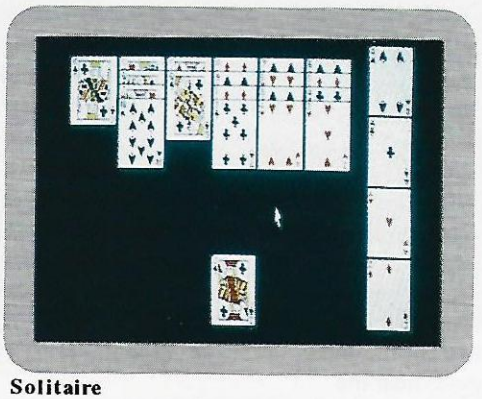
So, since I do not have access to the BitNet, Andrew Buttigieg (University of Ottawa, Computer Science) has been providing downloaded material for this column. Included on page 11 is his review of Uniterm.

Solitaire

This issue's game of the month is Solitaire, by D.S. Lay of Gloucester, Ontario. Written in H & D Forth, this is David's rendition of the classic game, Klondike. While some of the rules are slightly different from traditional Klondike, the game translates to the computer wonderfully. Although I never played the card game much, the ST version is addictive--I have spent many a late night trying to beat this game, and each time I play, it seems that 'next time' I'm going to win.

The graphics are superb: the cards are very detailed and realistically depicted.

Solitaire is, again, a shareware product. To emphasize this, the program flashes a 'commercial' randomly throughout the game. Shareware contributors get a personalized copy of Solitaire, without commercials.



Solitaire

Since this issue's feature is telecommunications, I thought I would dig around for the very best in PD/Shareware terminal software. It seems terminal programs are very common in the public domain--it makes sense, since on-line databases are usually a source for public domain software.

Though there were many excellent packages available, two stand out, in my mind, as being of commercial quality.

Vanterm

Vanterm is probably the best all-around terminal program I have used. Vanterm is probably most likened to Flash and Interlink ST, as they all use similar user-interfaces. This version (2) of Vanterm has been released as shareware (no set amount), and the complete GFA BASIC source code is available for a fee of $25.

Vanterm features a complete set of disk utilities, including the ability to show the amount of free space on a disk, and the ability to create new folders. Also included is a complete set of ARC utilities. To make use of the ARChive functions, ARC.TTP must be in the same directory as Vanterm.

File Transfer protocols include ASCII, Xmodem (128 byte and 1K blocks) and Ymodem (batch). There is also a menu selection that allows other programs to be chained/executed from within Vanterm.

A utility is included that allows Flash dial directories and function key definitions to be converted into Vanterm format.

Vanterm is a quality product. It could easily compete with the best of commercial terminal programs.

DC Formatter

DC Formatter is the most frequently used program in my software library--bar none. Why am I so enthusiastic about DC Formatter? Read on...

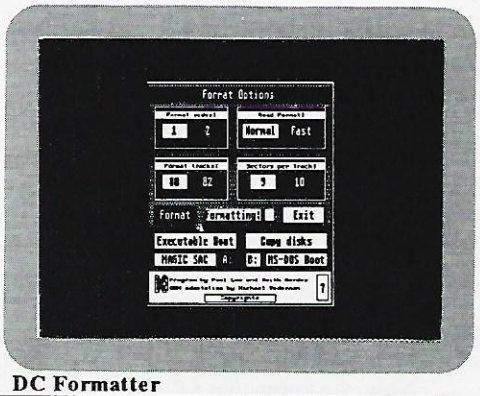
Firstly, DC Formatter is a disk formatting program. It allows the standard options of formatting single or double sided disks. It also allows extended formats up to 82 tracks with 10 sectors per track. You can also format using a method similar (but better, in my opinion) to David Small's Twister program. This 'twisted' version speeds up read/write times tremendously. The program can also format in 'Magic' (for use with Data Pacific's Magic Sac Macintosh emulator) as well as MS-DOS (for IBM PC emulators like pc-ditto and Ms-Em) format.

DC Formatter also copies disks. Unprotected disks of any format (even Magic Sac and MS DOS) can be copied intelligently.

This is the first piece of software that I have seen that allows a quick and easy method of modifying an ST disk's boot sector. DC Formatter's 'Executable Boot' option allows the following options at boot-up:

- set BIOS time
- cause a cold system reset
- turn verify off
- set resolution
- bypass hard disk
- run COMMAND.PRG

A separate version of DC Formatter is required for colour and monochrome monitors--this is really my ONLY complaint. Otherwise, the program is great. DC Formatter is the most reliable piece of software I have ever used--I trust disks formatted with it much more than I do those I format from the desktop!



DC Formatter

DC Formatter Desk Accessory

This is basically a desk accessory version of the DC Formatter program. There are, however, a few differences. This version does not have any disk copying capabilities, nor does it have on-line help. Both of these deletions were simply due to memory considerations. Two separate resource files are included (for both resolutions), so if you only have one monitor, you can delete the extraneous file.

The Accessory version now asks for a shareware donation. I've sent in mine, have you? ■

Chris Karson, RESET's Managing Editor, has been involved with Atari computers for several years. He uses his ST primarily for telecommunications.

Uniterm

Andrew Buttigieg

In the last issue of RESET, Ross Judson talked about terminal emulators such as the VT-100 series. UniTerm is one such program....and a lot more! The latest version (2.OC) around is a far cry from what was introduced back in 1986. Today's version emulates most functions of Digital Equipment Corporation's (DEC) VT-100, VT-102, VT-220 and VT-52 text terminals and of Tektronix's 4014 graphics terminal.

Several features make UniTerm a unique and powerful terminal program such as a wonderful implementation of Kermit, complete with server commands. Other file transfer protocols supported are X-modem with 128 or 1K byte options with CRC or checksum option and Y-modem batch. In addition, there's a complete dialer, an instant pop-up menu, a clipboard and a powerful macro processor.

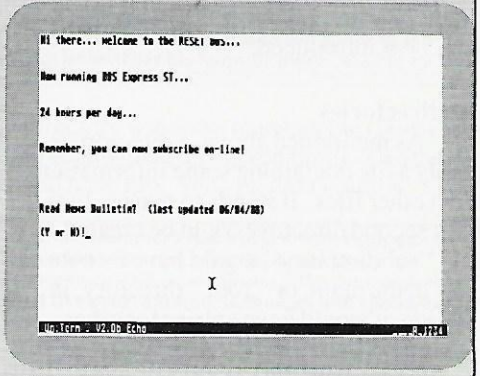
The dialer is rather simple to use. After filling in the fields for phone numbers and macro file names, dialing can be done by selecting the number from the pop-up menu. Once connected to the host it will then load a macro file, if filename was supplied, and execute it. This can provide a convenient auto logon once you write the code for you host. The dialer will also run the macro if there is no phone number supplied.

The macro processor has the ability to do numerous functions once programmed. For example, you could have it call up your favourite BBS and capture all your messages into the history buffer, have it upload or download several files (Remember BackTalk for the 8-bits?). There are 39 macro commands including one to redefine the pop-menu to one of the 69 internal UniTerm commands. There are also 10 numeric and 10 string variables available and there's a IF condition feature along with subroutine calling.

The newest feature in UniTerm is the clipboard. It is an on screen text capture function used by surrounding the text with a box. This text can either be sent back to the host or added to the clipboard buffer. Text in the clipboard can also be sent to the host by using the insert function. Everything in the buffer can be saved in a file too.

Other small features included are a 132 column mode (actually 128), a single line editor which allow you to edit the last 20 lines sent to the host, a printer toggle to direct incoming data to printer as well as screen and remote commands. Remote commands are sent to the macro processor (Have your host computer instruct UniTerm to send/receive files!).

UniTerm occupies a rather large portion of memory--about 250K or more. Allocating more memory to the system buffer can enable you to run programs from UniTerm. This has to be one of the best terminal programs in the public domain which has features that other commmercial programs lack. Not bad, considering it's free!


Hi there... welcome to the RESet BBS...
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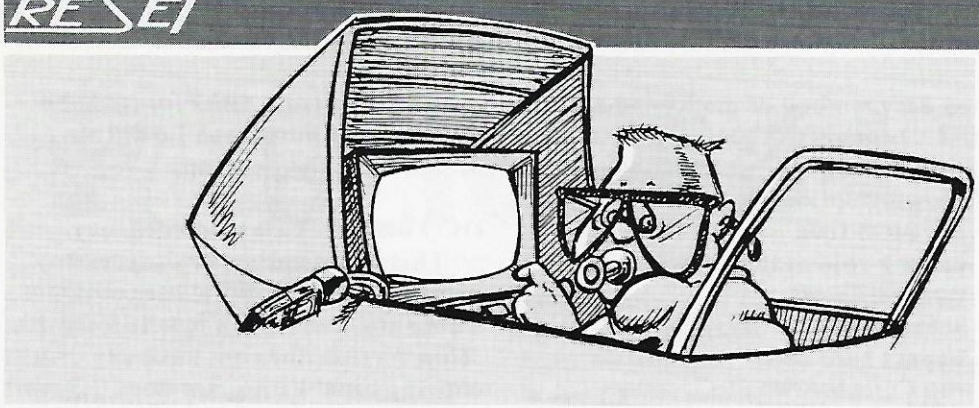
(Y or N)!_

Uniterm



THE NEW USER

William Demmery

Folders on the ST

Unless you've had some experience with an operating system that allowed the use of "subdirectories", you might find the concept of "folders" a little confusing. You might ask how files can be "inside" a folder; you might wonder why, within one folder, you might find another. The answers to these questions will become apparent when we examine the way in which the ST (actually, that part of the ST's operating system known as "GEMDOS") organizes files and directories on a disk.

In the early days of disk storage, capacity was limited, and the maximum number of files was fairly limited. A small portion of the recording surface was set aside as a "directory"--a list of the files on the disk and where they are located. As storage capacity grew, the number of files which could be stored on any one disk began to exceed the capacity of the directory (which usually contained a set number of "slots" for entries). Because of this–and because it is difficult to deal with all the files on disk when working with the directory--the concept of the "subdirectory" was introduced.

Subdirectories

As mentioned above, a directory is simply a file containing some information about other files. It stands to reason, then, that a second directory could be created. This "subdirectory" would have its own entry in the main, or "root" directory; in addition, it would have entries for other files. Now, here's the catch: a file listed in a subdirectory would not appear in the main directory. The result: files could be listed in a subdirectory and thus not show unless the subdirectory itself were examined. This allows us to store files "in" a subdirectory (called a "folder" on the ST), where they will not be visible unless the subdirectory is examined. Usually, subdirectories are used to hold files of a related nature--we can thus organize files into groups, each of which resides "within" a subdirectory all its own.

Now, we know that a directory lists files; it can also list another directory (think of a directory as an index). It stands to reason, then, that any one directory can hold an entry for another. In this way, we might create a directory for programming languages; inside, we could create separate directories for BASIC, C and Pascal, for example. Now we can store BASIC files in the BASIC subdirectory, or folder; C files can go into the C folder and Pascal files into the Pascal folder. From the "root" directory, we would see only the icon for the programming languages directory; clicking on it would show the three specific directories, and clicking on any of these would reveal the files stored "within". So, the concept of the folder is analogous with that of dividing a building into floors, suites, rooms, closets and shelves--and further, if necessary.

Paths

Because a folder is a file, it must be given a filename; this allows us to identify the folder. In addition to this, when accessing files from a non-GEM application (for example: ST Writer), the folder filenames allow us to specify where the files can be found. To do this, we specify the name of each folder which must be opened to find the files, preceded by a backslash ("\"). For example: we're using ST Writer, and we wish to edit the file "TO_MOM", which is stored in the folder "LETTERS" –which itself is located within the folder "STWRITER". When asked for the filename, the path must precede it; in this

Tips
for the New User

Bob Deskin

File Names

Although you can make your way around the ST with only an intuitive knowledge of file names, it helps to know the details. Terms like file extension, folder, path, and directory are used in manuals with very little explanation.

The general form of a complete file name on the ST is

```
directory\file.extension
```

The "file" portion is a name like 1ST_WORD or CONTROL. It can be up to 8 characters consisting of letters, numbers, the underscore (_) and the question mark (?). The 1 to 3 character "extension" can be used to indicate the type of file. You don't need an extension, but the operating system, as well as many programs, use specific extensions for specific meanings; ACC for desk accessory, PRG for program, and DOC for document are examples. The period is required between the file and the extension. Similarly the backslash (\) separates the directory from the file.

The "directory" or "path" is the location of the file on the system. It starts with a drive letter followed by a colon. Any "folder" or "subdirectory" is listed after the drive. A file that is not in a folder is said to be in the "root directory". If a file is on a disk that is put in drive A, the drive letter shows as "A". Put the same disk in drive B and the drive letter would be "B". This tells the operating system which device to look on. For example

```
C:\1ST_WORD.PRG
```

shows the program (PRG) 1ST_WORD on drive C.

If the file is inside a folder or sub-

directory, a backslash is used to separate the folder name from the drive letter, as in

```
A:\RESET\COPYDISK.DOC
```

You can, of course, create many different folders on your disks. Folders are handy for grouping related files. You can also create folders within folders. Simply open a folder by double-clicking on it from the desktop, and create a new folder using the New Folder option of the File menu. You can go 8 levels deep. Folder names are the same as file names and can include an extension, so you could have a file that was named

```
C:\PROGRAMS.DOC\STARTUP.TXT
```

Item Selector Boxes

The Item Selector box is used by most GEM-based programs to get files to read or write. You are presented with a list of files to choose from. However, if you need to change directories or restrict file names displayed, you have to know both the structure of file names and your way around the box itself.

The basic operation is simple. Point to the file you want and double-click, or click once to select it and click on the OK Button. If you're writing a new file, you'll have to type the name where it says "Selection:". It's a good idea to include the extension you want as well, since some programs don't add it automatically (even if it appears in the bar over the list of files). You can edit names using the mouse and the Esc, Delete, Backspace, and Insert keys. If you're entering a file name that's shorter than 8 characters, typing a period (.) will take you immediately to the extension area. The Cancel Button stops the selection operation.

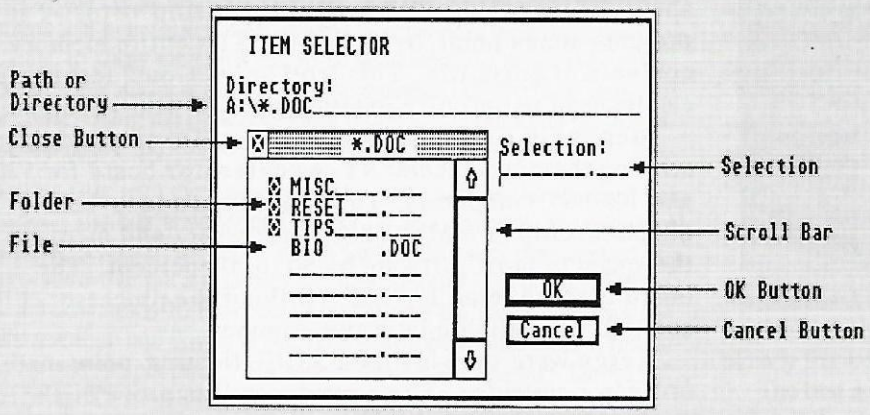
You can always see the directory or path you're dealing with. Usually the program you're running establishes the default path and extension. If the file you want is inside a folder, simply click once on the folder name to open it (this is different from the double-click needed on the desktop). The Directory is changed to include the folder name and the file list is now restricted to the folder contents. To get back to the original directory, click on the Close Button. The Close Button is used only for folders, you can't close the Item Selector box with it.

If the directory is not the one you want, you can edit it. Once you've finished, click on the shaded area beside the Close Button to refresh the file list. Similarly, if the file you want is on a different disk, simply put the new disk in the drive and click on the shaded area to read the new directory.

You can also restrict the names listed using wildcard characters which are substitutes for the characters that normally make up a file name. The question mark (?) is a replacement for any single character. For example, an extension of P?1 would find any extension that starts with P and ends with 1, with any one character in between. This particular example comes from Degas Elite and allows the user to easily select normal (PI1) or compressed (PC1) picture files. The other wildcard character is the asterisk (*). It replaces any number of characters or none at all. So a file name *.DOC will find any file with an extension of DOC, and a file name of REPORT.* will find any file with the name REPORT and any extension, including no extension. The wildcard characters can also be used in the directory.

Lastly, there is the Scroll Bar. The box allows you to see up to 9 files and folders. If there are more in the current directory, you can use the Scroll Bar to move up and down. The Scroll Bar is the same as those on the windows of your desktop. You can go up and down one entry at a time using the arrows, up and down a group by clicking in the shaded areas, or up and down the entire list by dragging the light portion of the bar.

That's it for this issue. If you have a question or a topic you'd like discussed, or even a tip to pass along, we'd like to hear from you. ■



Annotated Item Selector Box

Bob Deskin has been working with computers of all sizes for over 15 years. He became an avid STer over two years ago and can honestly say that he watches his monitor more than his TV.

example (assuming the disk on which the files are located to be in drive B:), we would enter: "B:\STWRITER\LETTERS\TO_MOM". Note the use of that backslash to separate each item in the path.

As long as you know the name of the folders to go through, you shouldn't have any trouble with paths and folders--even when working with TOS applications. Of course, with GEM and the Desktop or the file-selection box, you need only click on successive folders to find the files you want. And, when working with GEM, all you need to do to "exit" a folder--and thus see the contents of the directory within which that folder is located--is to click on the "close button" of the directory window.

Folders are useful for dividing your files into categories and keeping your directory windows manageable (fewer files to deal with at any given time). Use them and have fun. See you next issue! ■

William Demmery has worked with computers since 1981, starting with the Apple II. He has experience with over a dozen different computers and five programming languages and specializes in word and information processing. He works daily with an MS-DOS computer and at home enjoys his Atari 130XE and 1040ST. He is president of a an eight-bit programmers' club and maintains a BBS.

... COMDEX '88 continued from page 6

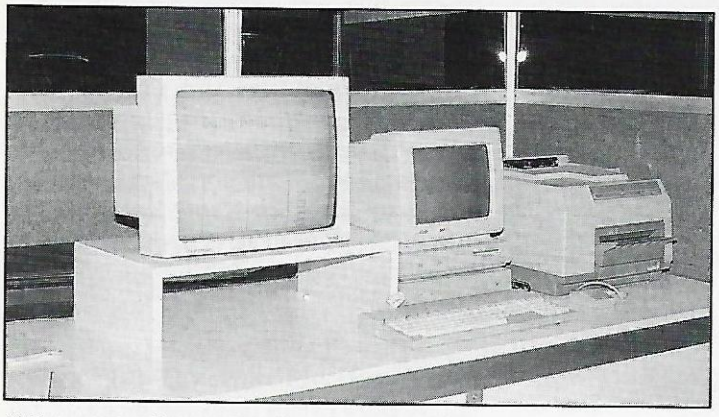
which can scan up to 300dpi and up to 32 dithered scales of gray. List price for the Scanner is $1239 and includes the scanner, an interface for the ST and the necessary software.

CADD Systems

ISD Marketing had their new CADD (Computer Aided Design and Drafting) package on display. **DynaCADD** is a high-powered system designed to compete with such packages as AutoCAD. DynaCADD is a 2D and true 3D CADD system that has the ability to import standard DXF files. DynaCADD supports several output devices, including the SLM804 laser, Postscript, a variety of pen plotters and most dot matrix printers.

Michtron had their entries into the professional CAD market as well, featuring both **GFA Draft Plus**, and **Master CAD** packages. GFA Draft Plus is a two-dimensional CAD drawing program, an enhanced version of GFA Draft, that sells for $159.95. Master CAD is a two-dimensional/three-dimensional system that Michtron was offering at an introductory price of $199.95.

Antic Software had version 2.0 of their 2D animation software, **Cyber Paint**, along with the rest of their Cyber Studio software.



Calamus running on 19" Moniterm monitor

Application and Business Software

Business Applications are a hot number on the ST these days. Several major products have been introduced for the ST/Mega, including the **B.E.S.T. Business Management Integrated Accounting System, Superbase Professional** and **Word Up.**

B.E.S.T. Business Management is an integrated accounting package that offers a powerful accounting system for non-accountants. The complete package retails for $395, and version 3.0 is now shipping.

Superbase Professional is **Progressive Peripherals and Software's** programmable relational database. Features of Superbase Pro include a forms editor, text editor and a powerful database management language that allows for the creation of turnkey systems.

Word Up is **Neocept**'s entry into the crowded ST word processor market. Word Up supports GDOS fonts and output, and has the ability to import graphics from most standard formats. Along with Word Up comes Fontz! a font creation/conversion utility that allows the conversion of fonts from the Macintosh, Amiga, and various ST formats to standard GDOS fonts.

The **VideoMan** is a new video retail management program from **Intersect** software that controls pricing, inventory and report generation for video tape rental shops.

Programming Tools

Manx had their **Aztec C** language on display, as well as their new C source Debugger. Aztec C features in-line source debugging and 68020/68881 processor support.

Michtron was showing **GFA BASIC version 3.0.** which contains many new features, as well as a significant increase in speed. Programs written in previous versions of GFA can be run and compiled with the new system. Also on display were some new reference materials; the **GFA BASIC Programmers Reference Guide**, the **GFA BASIC Training Reboot Camp** and a nifty **GFA BASIC Reference Card.**

Other Products

Intersect also had their new **Revolver** program at the show. This program allows the user to stop virtually any program at any point, by saving the ST's entire memory contents to a disk file. This "roll-in/roll-out" technique can be used to optimize loading times for many programs.

Megabyte Computers of Webster, Texas was demonstrating their spectacular **ST-Accelerator** board for 520 and 1040 ST computers. The board uses a Mos-Tek 68000-16 chip (a 16Mhz 68000 processor), and increases the speed of most software by 50 to 100 percent. The board is set to retail for $229 (without the processor chip) and will be available later this summer.

Xetec were showing their XCEL floating-point math processor cartridge. The cartridge will improve mathematic calculations by 2-30 times. The catch? Software must be re-compiled using Xetec's math libraries, therefore, commercial software manufacturers will have to support the product if it is to become of any use. At a price of $199, I see no reason why the cartridge shouldn't be a big hit.

Fall Comdex--Las Vegas

The next Comdex occurs this fall in Las Vegas. It should prove to be very interesting, as Atari, in probably their biggest announcement, promised to have a very large presence. I can't wait. ■

Universal Item Selector

Bob Deskin

TITLE: Universal Item Selector
TYPE: File Utility and Replacement Item Selector
PRICE: $15.95 U.S. $19.95 Cdn.
FROM: Application and Design Software
909 Northwest Starlite Place
Grants Pass, OR
97526

Have you ever been running a program and wished you had the file utility functions of the desktop at your fingertips? There are some utilities that run as desk accessories, but what if the program doesn't allow access to them? Now, for all programs that use the standard GEM Item Selector, there is a solution.

The Universal Item Selector, or simply the "Universal", as the publisher, Application and Design Software, calls it, is a program that replaces the standard GEM Item Selector with a much more powerful version. All the standard features are available, plus most desktop functions; there are even some functions which are not available from the desktop.

The Universal is installed using a program that is placed in the AUTO folder. On boot-up, the standard Item Selector is replaced with the Universal, which then is used automatically whenever a program accesses the GEM Item Selector box. On my 520ST, the Universal requires just over 23K RAM. A desk accessory is included in the package, to allow the Universal to be used from the desktop or from programs that allow access to desk accessories but don't use Item Selectors. Using the desk accessory requires an additional 6K RAM over and above the Universal itself.

Selecting files with the Universal is the same as with the standard Item Selector. The box is wider and deeper, to accommodate the additional functions; however, the top is in the same location as the standard box, so programs that put a title over the Item selector will not be affected. The window holds 10 files, rather than 9, and the window arrows actually scroll up and down, if you hold down the mouse button, rather than by one file per click. The labels change as required: "Directory" changes to "Destination" when you Copy or Move; "Selection" changes to "Folder Name" when creating a folder and to "New Name" when renaming a file or folder.

The two new buttons at the top allow you to format disks and create new folders. The Format function provides options for one or two sides, 9 or 10 sectors per track, and 80 to 82 tracks. You can also request the "Twister" format, if you're using a Mega.

The letters along the right-hand side are drive letters. Only those drives that are active on your system will be dark; the others will remain light. The highlighted drive corresponds to the current path. To check the directory of another drive, or to use another drive for the destination of an operation, simply click on the appropriate letter.

The four new boxes under the Cancel button are not buttons; they are icons representing new functions. To do something to a file, you select the file name and drag it onto the icon. You can drag the file from the window or from the Selection area; you can also drag folders. If you simply click on a folder name, it opens, just as in the standard Item Selector. When a file is dragged over an icon and the button released, the icon darkens, to show that the function is selected. What happens next depends on the function selected. You can Move and Copy files or folders. When you Move or Copy, you retain the original names, unless there is a name conflict between the source and the destination. Select a file or folder and drag it to the Move or Copy icon. Enter the destination drive and Directory - whatever is different - and click on OK. You can also Move and Copy using the wildcard characters: "*" (to replace one or more characters) and "?" (to replace a single character). A Move is normally a copy followed by a delete and is not available from the GEM desktop. Be very careful when moving files, because if something goes wrong, such as a name conflict between the source and destination, you may lose the original. Moving a file to a different folder on the same disk does not require a copy-and-delete--the path is simply changed in the directory structure.

You can Rename a file (change the file name and/or extension) but retain the original directory (to change directories, use Move). You can use the Rename function on folders as well, but since GEM doesn't allow folders to be renamed directly, the Universal creates a folder with the new name, copies the contents of the old folder to it, and deletes the old folder.

Four additional functions are available from the window. The scroll bar at the bottom of the window is used to see file sizes and time/date stamps. Clicking on the question mark in the upper right-hand corner is equivalent to selecting "Show Info", under the File menu on the desktop. Clicking on the "P" in the lower left-hand corner prints a listing of the current directory as shown under the Directory label. Dragging a file to the check mark in the lower right hand corner opens a dialog box, allowing you to change a file from read/write to read-only or vice versa. Any file that is read-only has a check mark beside its name in the window.

This is an excellent product, and the more you use it, the more you'll like it. With my one-drive system and "only" 512K, I had to exit constantly from applications to do disk utility work; now, I use the Universal. I strongly recommend it.

Update

Just before we went to press, we received version 2.0 of the Universal from A & D Software (we reviewed version 1.01). I liked the original, but this is heaven. They've added over 15 new features to an already feature-packed product.

The best is that you can now select multiple files for an operation, either by lassoing or using the Shift-click method. You de-select the same way. And, surpassing the desktop, you can scroll the window without loosing your selections.

Visually, there are some changes. Only active drives are shown. The title is now "Universal II". Clicking on the title opens a dialog box where you can select the file sort sequence and whether hidden files are shown. You can even choose to see files in the order they appear in the disk directory. Another addition is the "F" button. Enter a file name and click the "F", and a search is done on the file name from the current directory through all lower level directories. Just over the Selection area are six quick extenders. Clicking on one changes the default extension and what files are displayed. You can set four of them yourself. You can also configure the Universal with

continued on page 62

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Type of payment: ☐ cheque ☐ money order ☐ Visa ☐ MasterCard ☐ American Express

*Credit Card No.:_____ Signature:_____ Expiry Date:_____

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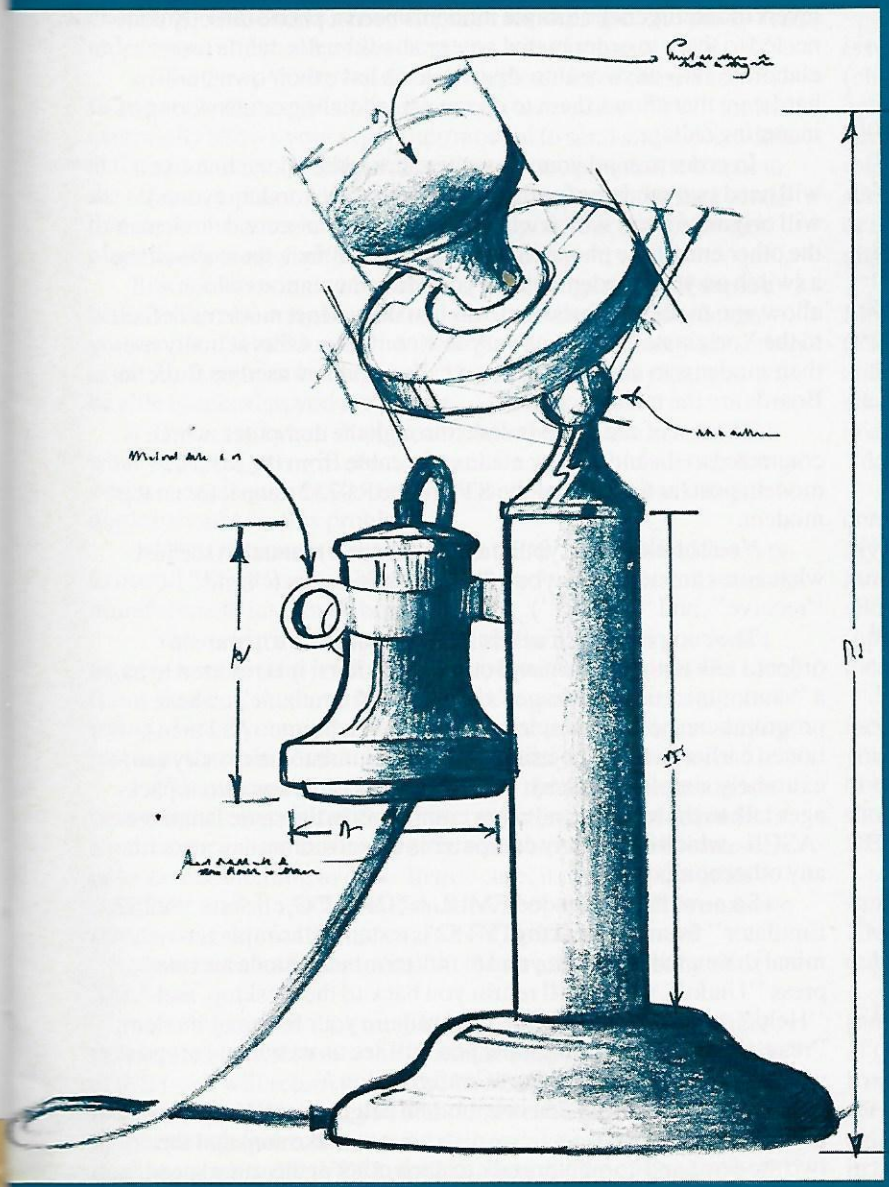
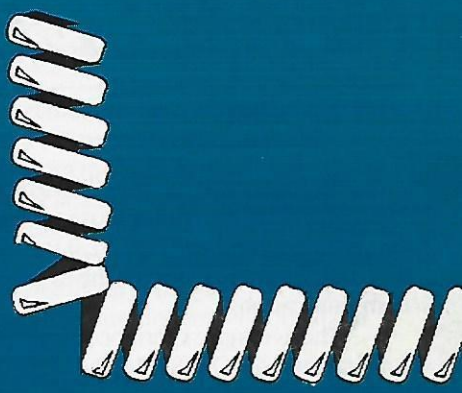
Exploring Telecommunications





For as little as one hundred dollars, you can turn your computer into a social and information center that never closes. Whenever you wish, at any time of the day or night, you can get the latest news, find up-to-the-minute information on any subject, participate in hundreds of different discussions, or just play games with other 'real' opponents, without ever leaving your own home.

Rick Beetham

One of the hottest-selling peripherals for any computer right now is a relatively inexpensive piece of hardware known as a "modem". The reason for this phenomenon is rather straightforward: it is the magic of telecommunications, of talking to other people through your own computer, some software, and a telephone line.

Most people have already read or heard something about modems and telecommunications and know that these services exist commercially, through well-known entities such as as Compuserve, Genie or The Source. However, it is generally accepted

GETTING STARTED

Rick Beetham

As I sat down to write this article, I came to a most amazing realization: except for those persons who have some form of communications background, it is usually the computer novice who is quickest to embrace the exciting world of computer telecommunications.

The average experienced user (those of you who successfully mastered TOS, ROM, RAM, bits and bytes) can be intimidated by the strange new language used in telecommunications. Lets face it: it was hard enough just getting a handle on the basics. Telecommunications buzzwords might as well be Martian. A computer novice, on the other hand, isn't going to be put off by any 'new words' because he is at the stage where every new term is funny-sounding. So what's a few more?

In essence, computer telecommunications is an activity where one person communicates with another by accessing a remote computer. The simplest combination would involve two people using their own computers, compatible modems, compatible software packages, and the telephone line. Notice that the computers themselves need not be compatible. All that is important is that the communications packages (also known as terminal software) and modems understand each other. The type of computer at each end is not important.

To give you a quick exposure to this "newspeak", I would like to walk you through an initial modem setup, using the VT-52 terminal emulator that you received as a desktop accessory with your Atari ST. Boot your ST, hold on to your RESET Magazine, and come along: we will be your guiding light in this strange new land called 'Telecommunications'.

Besides the telephone line, the modem itself is the most important element needed for communicating with other computers. It is the hardware that does the actual 'talking' across the telephone line. Modems are very specialized machines and have to be "set-up" or given explicit instructions on how they are to talk to other modems.

Modems themselves can be classed into several categories. For example: there are "acoustic" modems and "direct-connect" modems. Acoustic modems were the original modem and contained rubber cups that the phone clipped into. These all but disappeared with the introduction of modular telephone plugs, which direct-connect modems use to plug right into the phone line for less error-prone communications. There is still, however, a small demand for acoustic connectors for portable computers. This is due to the fact that most pay phones and hotel phones do not have modular connections available.

Another category that modems can be divided into is their levels of intelligence. Simple modems need a phone directly connected to them in order to dial out, or answer calls, while more elaborate auto-answer auto-dial modems have their own built-in hardware that allows them to do the actual dialing or answering of incoming calls.

In order to send your messages across the phone lines, you will need two modems for the connection. One modem (yours) will originate a call which will be answered by a second modem at the other end of the phone line. As a matter of fact, there should be a switch on your modem (check your documentation) which will allow you to set your modem to do just that. Most modems default to the "originate" mode, as very few computer users actually use their modems to answer incoming calls (modems used on Bulletin Boards are the main exception).

The rest of the setup is done through the computer, which is connected to the modem by means of a cable from the RS232/ modem port (at the back of the ST), to the RS232 connector on the modem.

You should check your modem owner's manual to see just what wires are needed beyond the three basic ones ("send", "receive", and "ground").

The computer itself needs a special piece of software in order to talk to the modem and other computers; it is referred to as a "communications package" or "terminal emulator". These programs can be very simple or extremely elaborate. As I mentioned earlier, we will be using the VT52 Emulator accessory (an extremely simple program). Practically all communications packages talk to the modem and other computers in the same language--ASCII--which is why any computer is able to communicate with any other computer.

So now, having loaded EMULATOR.ACC, click on "VT52 Emulator" from the Desktop (VT52 is a standard simple terminal). You will find that you are in "terminal" mode and may press "Undo", which will return you back to the Desktop, and "Help", which will allow you to configure your terminal/modem. Press "Help" at this point; now you will see an extremely cryptic window labelled "RS232 Port Configuration."

Besides ensuring that one modem originates the call and that the other modem answers it, we also have to make sure that the two modems and computers talk to each other at the same speed.

that if you use these services often, they can be very expensive, as even a $6/hr charge can rapidly add up. As a result, a lot of people avoid getting involved with modems because of the "added expense". Well, there is another source for most of these services –maybe not as polished, but certainly not as expensive. They are known as local BBSes, or Bulletin Board Systems.

A BBS is usually run by a single person, store or user group. Its hardware can vary from something as simple as an Atari, modem and disk drive, to an elaborate Unix-based system running on a minicomputer. Unbelievable as it may sound, most systems are run by a single individual--a hobbyist who connects his computer to the telephone line, in the hope that people will call and use his

Thankfully the manufacturing industry has settled on several standard speeds ("baud rates") and protocols, enabling different brands of modems to work with each other. You should click the baud rate at which both modems will operate (both must use the same speed and RS232 configuration). The three most common modem speeds are: 300, 1200 and 2400 baud.

"Parity" used to be an important feature, and some systems still require it. Parity allows the modem to help out with error-checking. These days, however, most services use "no parity", so unless you run into an oddball system, set your parity to "none".

The terms "full-" and "half-duplex" have caused confusion for both novice and experienced users alike. "Full duplex" essentially allows your computer/modem to send and receive data at the same time. Usually, when you type a character, it is sent to the other computer, which displays it on its screen and then sends that same character back to you, whereupon your computer displays it, allowing you to see what you type.

Sometimes it may be necessary to change to "half duplex" because the receiving computer doesn't "echo" the characters you send it. "Half duplex" will display a character on your screen at the same time as it is sent out. This is the only way that you will be able to see what you are typing.

If you are in half duplex, and the other system echoes back what you type, you will see double characters, which makes things very ccoonnffuussiinngg. In most cases, switching back to full duplex should fix this problem.

"Bits/character" should be set to "8". This will allow you to use all 256 characters, if needed. Very few systems still communicate with just seven bits.

The "strip bit" is related to bits/character, and you won't usually want to strip it off. However, if you start to receive a lot of funny-looking characters, it may be because the other computer is trying to send you some of its special characters. To clean this up, just turn "strip bit" on.

"Flow control" is used to control the flow of information between the two computers. One computer may need to pause for a moment, perhaps to allow you to read the information onscreen, or to save something to disk. In this case, it must tell the other computer to stop sending information temporarily. There are two standard signals for this: one is "Xon/Xoff"; the other is "Request to Send/Clear to Send". Most users can get by with Xon/Xoff.

Now you can click on the "OK" button on your configuration menu and return to the terminal window. Pressing "Undo" at this point will return you to the Desktop; you should then save the Desktop. With luck, you should never have to go through any of this set-up again. You are finally ready to call the other computer, so click on the VT52 emulator again. The method you will use to make your call will depend on the type of modem you have. If you have a simple modem, then you will have to physically dial the other computer's number on your phone, wait for the modem at the other end to answer (you'll hear a tone or something that sounds like heavy static), turn your modem on and hang up the phone. Press "Return" a couple of times, and you should see something happening onscreen. You're connected!

If you have an intelligent modem, then all you have to do is turn on the modem and enter the appropriate commands (check your modem manual) from the keyboard. If you haven't purchased a modem yet and are considering an intelligent modem, then you should ensure that it is "Hayes compatible" (that's the de facto standard) with a "Hayes" command set. This will ensure that practically any software you may buy or use in the future will work with your modem without major modification.

Well, now, just whose computer are you going to call? Most of us start off by calling a local Bulletin Board System ("BBS"). A BBS consists of a computer, specialized software and an auto-answer modem. It is accessed by other people, who post messages and want ads (much like a physical bulletin board at school or work), start dicsussions, and "upload" and "download" Public Domain software.

As I had mentioned earlier, computers do not have to be compatible to communicate, and it is a very simple matter for, say, an IBM, to receive and store ST programs. This is possible through special "protocols" (file-transfer procedures) that allow computers to flawlessly pass information between them (upload and download) regardless of the contents of the files themselves.

Unfortunately, the VT52 Emulator has no file-transfer facilities. If you obtain a modem, I seriously recommend that you acquire, at the very least, a Public Domain communications package with upload and download capability. You should ensure that one of the protocols supported is "XMODEM".

There are many types of file-transfer protocols available, some better, some worse, but none are supported as widely as XMODEM. If a particular Bulletin Board System supports only one type of file transfer, it will probably be XMODEM.

Once you have perfected your technique and feel comfortable calling local Bulletin Boards, you may want to try one of the many other commercial services available. These vary from online, real-time gaming, to the extensive and alluring services of Compuserve. The world of computer telecommunications is changing and expanding all the time. It is boundless in both its pursuit and enjoyment. Good luck. ■

computer to leave messages, start discussions, distribute Public Domain software, or just play games. They are the unsung heroes of Telecommunications and enjoy the long and difficult job of running the BBS, of being its System Operator ("SysOp").

Most of these BBS's offer their services free of charge, others may charge a minimal (say $20) annual fee which is used to offset operating costs (this is not a cheap hobby for the SysOp), or to support some sort of extra feature that members are willing to pay for. Such extra features can be things as simple as guaranteeing new Public Domain software on a regular basis, multiple user access, sales, long distance electronic mail, and so on. The types of services possible are literally endless.

Bulletin Boards are not limited to large cities. Any town that has any sort of personal computer activity probably has at least one active BBS, while larger cities can literally have hundreds! The beauty of these boards is that they don't even have to be the same type of computer as yours; all computers have the power to talk to and understand each other. There is no reason for you to look for just ST boards. You can talk to an IBM, an Amiga, or anything else that is available, and it won't cost you anything more than the price of a modem and a software package.

So where do you get the BBS number, and whom do you call? The best source of BBS numbers is unfortunately another BBS. Most boards try to keep a current list of what is available. As I mentioned earlier, it is an expensive hobby and a lot of systems come and go depending on how costly they become to maintain. So, the difficult part for the novice is to get that first valid telephone number, to make that first contact.

I recommend the following course of action:

- Ask a friend. If you know of anyone at all who uses a modem, ask him for a number that you can call. The first one will literally be a key to hundreds of others.
- Check with a local user group. Remember that your ST has the power to talk to any other computer--so don't limit yourself to just trying to find Atari users.
- Local computer stores love to sell hardware: if there is a BBS around, modems are needed.
- Check with local centers such as libraries, book stores, community papers, etc. SysOps love to have people call their BBS's: the more, the merrier. Most boards will try and advertise their existence in order to get more people active in "their" hobby.

A closing word of caution: if you find talking over the modem enjoyable, then you should be prepared to "put up" with numerous complaints, from friends and family alike, about how busy the phone has become all the time. It can become quite normal to "tie-up" your phone line for several hours a night, just catching up on the news and views around town. Of course, if you had a second phone line and set your computer up so that people called you... well, that's a different article. Above all else: if you get yourself a modem, enjoy... ■

Rick Beetham is an E.D.P. Staff Officer in the Public Service. He purchased his first computer, an Atari 800 with tape-drive, via mail order (they weren't available locally seven years ago!). Today his seven- and eleven-year old daughters are the primary users; Rick bought his ST two years ago. A founding member of the N.C.A.U.G. in Ottawa, his main interests are in telecommunications and programming.

The Need for Speed

Rick Beetham

Question: *When is an inexpensive modem not a bargain?*
Answer: *When you purchase a 300 baud modem for your ST.*

Mail order houses in the United States advertise modems at prices which average roughly as follows:

300 baud: $ 50
1200 baud: $120
2400 baud: $280

On the face of it, $50 for a modem seems to be quite a good deal for an ST owner who isn't sure if he needs a modem or not. After all, the next-highest speed is almost three times the price! Who needs it!

Well, if you are planning only to exchange messages with people, then 300 baud may be acceptable. There will, however, come a day when you will regret not having chosen something a little faster. Your ST needs the speed of a 1200 or 2400 baud modem.

Simply put: "baud rate" is the number of bits that the modem is able to send over the phone line in one second. To put this into perspective, let's say you want to read a screenful of information (a message, for example). The screen is 80 characters wide and about 24 lines long, for a total of 1920 characters. Most people understand that it takes eight bits of information (one byte) to define a single character. Modems use control characters and special flags to ensure reliable communications; as a result, each character sent across the telephone line averages out to about 10 bits. Therefore, a whole screen of information would take 64 seconds to be received

at 300 baud, 16 seconds at 1200 baud, and eight seconds at 2400 baud. The formula is: 1920 (characters) times 10 (bits per character), divided by the baud rate. 300 baud is about perfect for reading text as it scrolls across your screen; at 1200 baud, you will probably have to start and stop the text as it scrolls by.

If all you ever want to do is to read text, then any modem should do. But, there is a veritable treasure chest of other information available to you. A busy ST BBS will have literally hundreds of public domain programs available for downloading. This is where you will regret having a slow modem. Most ST programs are big. It is not unusual to find ST files of well over 200K, and at 300 baud, you are going to spend a very long time downloading them.

It won't be just the big files that will frustrate you. As an example, look at what happens with a small DEGAS picture file which is less than 32K (32034 bytes). At 300 baud, it will take approximately 18 minutes; 1200 would take 4.5 minutes and 2400 would be just over two minutes. Now, as if all this idle time weren't enough, let me also warn you that most bulletin boards restrict the amount of time that one person can be logged onto the system each day. If you are lucky, you will be granted a limit of one hour. Well, at 300 baud, you just used up one third of your entire access time downloading one small picture! If you are really quick, you may have time for two more, but that still isn't the worst of it.

As I mentioned, DEGAS files are small! A lot of very good files are well over 100-200K. If you have a 300 baud modem, then it would be impossible for you to download any file of more than 100K in under an hour. Most bulletin boards will automatically refuse to let you tie up the system for that long a period.

300 baud modems were good for those who had 64K RAM machines and files smaller than 32K, but they just don't have the necessary speed for newer computers like the Atari ST. If you are thinking of buying yourself a modem, then you should seriously consider one that is at least 1200 baud. The ability to download anything you might want easily justifies the extra cost, and you will also have avoided purchasing a 300-baud dust collector. Your ST has a need for speed. ■

Making the Most of On-line Time

Stephen Couchman

After your modem and computer are finally communicating, so that you can call another computer and get both computers to 'talk' to each other properly, it would be helpful to be able to use some of the on-line services that are available. One of the database services that is quite popular today is called the 'Compuserve Information Service'. This article is intended to show you some of what you will find on Compuserve, including some of the features available, and hints on how to make the best use of your time and money.

It is particularly important when using a service such as Compuserve to keep in mind that you are paying for each and every minute that you are connected to the service. The sooner you can become an 'expert' user of the service, the more efficient you will be in time and money spent.

Before logging on to Compuserve for the first time, it is advisable to obtain one of the many telecommunications packages that are available for the Atari ST so that you can make use of some of the features while you are on-line. It is suggested that you choose one that gives you the use of a capture buffer (the program uses part of the memory in your ST to save everything that comes to, and goes from, the modem), an auto-dialling menu or list that allows you to build logon scripts, and a file transfer protocol such as XMODEM. Many of the packages include an introductory package to Compuserve that gives you some free time (usually one hour) on the service so that you can get accustomed to the commands. While this should not be the deciding factor in choosing a telecommunications package, it is an added benefit.

The capture buffer is very useful when you want to read the text that comes from the service, after you have logged off. It is advisable to capture the text in the buffer, and read it after you have logged off, since while you are logged on to the service and reading, you are paying for the time you are spending reading. It does not make much sense to log on to Compuserve, or any other service for that matter, at 2400 baud (which means that the text is being sent at a rate much faster than most of us can read), and spend most of the time using CONTROL-S and CONTROL-Q to stop and start the text as it is being read. Remember that, depending upon the information service that you are logged on to, and the time of day that you use it, you will be paying from $10.00 to $200.00 per hour!

An auto-dial feature is used when you frequently call a service that requires a complicated logon sequence. It will allow you to save the commands that are to be sent to the service in a file so that you do not have to remember them each time that you need them. This is particularly useful if you are using one of the public networks, such as DATAPAC or TYMNET, to access Compuserve. These networks are not very user friendly, so being able

to recall the commands necessary to use them can save a lot of aggravation.

One of the many benefits of using these types of services is the access given to public domain programs. If you want to transfer a copy of a program from Compuserve to your Atari ST, you will need to use a file transfer protocol that transfers programs without errors; XMODEM is one common protocol that is used for this purpose. One of the hazards of telecommunications is the possibility of noise on the phone line that results in corruption of the text or data that is being sent. If you are receiving text on a noisy line, one or two transmission errors may not make the text unintelligible since we are intelligent enough to determine what the correct text should have been. Computers on the other hand, require that the data that makes up the program be free of errors, so it is possible that one transmission error will make a program unuseable. The use of error detecting protocols, such as XMODEM, makes the transfer of programs, or binary files, a simple task.

Going On-line

The first time that you actually call the Compuserve Network, you will be taken through a series of questions that will inform Compuserve how you intend to pay the charges that you incur. After this registration is complete, you will be logged on to the Information System, and will encounter a screen similar to this:

```
---------------------
What's New This Week NEW-1
1 Practice Forum Software Free
2 Money Fund, CD Info Online
3 Solve Mystery to Win Credit
4 New Access Number in Georgia
5 Online Today Daily Edition
6 Uploads: New Forum Files
!
---------------------
```

This is a sample of the first menu that you will encounter when you first log on to Compuserve. It gives you an idea of some of the new items that are available to be browsed, downloaded, and played. One particularly informative section is the 'Online Today' selection which lists the latest news in the computer industry. If that is the selection that you wish to browse, just type '5' to choose that menu item, and a menu similar to this will appear: (if the capture buffer in your program is not open yet, it should be opened so that you can save the text in your ST's memory, for reading after you have logged off)

```
-------------------------
One moment please...
Online Today OLT-15
ONLINE TODAY SERVICES
1 Monitor Daily News
2 CompuServe This Week
3 Forum Conference Schedules
4 Online Today Readers' Forum
MORE !
-------------------------
```

At this point you have the option of requesting more menu choices, by pressing the carriage return key, or choosing a menu item. Let's assume that we are interested in today's news, so we choose item #1, 'Today's Monitor News':

```
-----------------------
Online Today OLT-90
TODAY'S MONITOR NEWS
1 Toshiba Offers Backlit Screen
2 TI Adds Business Systems
3 Dialog Offered for Sale
4 Super Collider Funding Debated
5 Summer Computing Institute
6 USAF to Build Computer Center
7 Phoenix, Microsoft Sign Pact
8 Monitor Week in Review
9 Yesterday's Late News
!
---------------------
```

Now we can capture any of the news items that are of interest to us, or get a short summary of the week, or yesterday's news. (Due to space limitations, these choices will not be shown here.

Once you get to this position in the menu structure, it can take quite a long time to get back to the 'top' menu, if you get to the top by pressing a carriage return at each '!' prompt. Once you know the different areas that you are interested in visiting, use of 'Quick Words' can help you to move around more efficiently. For example, if we wanted to visit the Atari 16 bit forum at this point (a

Techie Telecommunication Tidbits

(A glossary by any other name)

Stephen Couchman

ASCII (American Standard Code for Information Interchange) - a standardized set of one-byte codes which represent characters, numerals, punctuation, special "control codes" and symbols. For example: the ASCII code for the letter "A" is 65.

Baud - the speed at which data are sent through a modem. Usually equated with "bits per second" on microcomputer systems.

Bit - the unit of information that represents one of two possible states, usually one or zero.

BPS (Bits Per Second) - the number of units of data that may be sent over a modem line in one second. "1200 baud" is equivalent to 1200 bits, or approximately 120 characters, per second.

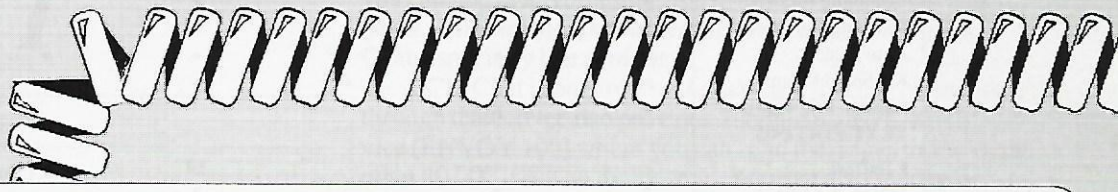
forum is a place where people of similar interests can exchange ideas, leave messages, chat to other users, etc.) the command 'GO ATARI16' would get us to this position:

```
-------------------------!go atari16
CompuServe ATARI16
One moment please...
Welcome to ATARI 16-bit Forum, V. 4C(240)
Hello, Stephen Couchman
Last visit: 30-Apr-88 23:15:03
Forum messages: 84260 to 100552
Last message you've read: 100057
Subtopic(s) Selected:
All Accessible
No members are in conference.
Press <CR> :
ATARI 16-bit Forum
FUNCTIONS
1 (L) Leave a Message
2 (R) Read Messages
3 (CO) Conference Mode
4 (DL) Data Libraries
5 (B) Bulletins
6 (MD) Member Directory
7 (OP) User Options
8 (IN) Instructions
Enter choice !
--------------------
```

Now you can read messages left by other forum members, leave your own messages, or browse the data libraries which contain public domain software, programming hints, and other highly useful material.

This seems like a good point to let you get on with exploring Compuserve, and other data bases on your own. If there is sufficient demand for it, another column can be devoted to more explanations of the kinds of things available to you on these networks. If you have any specific questions that you would like answered I can be reached through RESET, or better still, give our bulletin board a call and leave me a message. ■

Stephen Couchman is a software engineer, author of I*S Talk, and co-author of The Isgur Portfolio program. He is very interested in sharing his knowledge of GEM and "C" programming



Byte - a sequence of eight bits. The combination '00100000' equals 32, and represents the space character (" ") in the ASCII character set.

Checksum - an error-detection mechanism used in file transfer protocols such as "XMODEM". A checksum represents the sum of the data bytes that are being transferred in the block. It is prone to random errors on a noisy line.

CRC (Cyclical Redundancy Check) - a means of error detection that is used in protocols such as "XMODEM-CRC". It is a more reliable error-detection mechanism than the checksum method.

DataPac - a communications network provided by Bell Canada to allow access to other networks, such as Compuserve, by using a local telephone number. Additional communications surcharges will apply and may be greater than a direct long-distance call to the desired network.

Duplex - transmission in either direction over a communication link. Full-duplex allows simultaneous two-way transmission. Half-duplex data to be transmitted in only one direction at a time.

Handshaking - the exchange of signals between two computer systems before starting data transmission, such as a file transfer. An example: the acknowledgement and rejection of data blocks during an XMODEM file transfer.

Hit - the corruption of data, such as the change of a bit from a zero to a one, on a noisy telephone line. This may render the transferred file unuseable, if it is a program.

Online Service - a database service, such as Compuserve, Dow Jones News Retrieval, etc., that is accessible to a modem. Various services, such as news, stock quotations and airline reservations, are available.

Modem - a device that "MOdulates" (changes from digital information to analog sounds) and "DEModulates" (changes from analog sounds to digital information) signals transmitted over telephone lines.

Parity - a crude error-detection mechanism. An extra bit is appended to each character so that the sum of its bits is always odd or even. For example: if even parity is used, a "1" bit will be appended to the ASCII code for the character "5" (53, or 00100011 binary) to make the sum of the bits even: "001000111" has four "1" bits--an even number.

Protocol - a set of rules established for the transmission and reception of data so that data exchange, such as file transfers, is possible. "XMODEM" and "YMODEM" (an enhanced version of XMODEM) are examples. A file to be transferred is divided into blocks and transmitted from the sender to the receiver, one block at a time, with error detection.

Start bit - A special bit used to signal the begining of a character to be transmitted.

Stop bit - A special bit used to signal the end of a transmitted character.

Terminal emulation - the ability of a program or terminal to simulate the actions of a specific terminal, such as Digital Equipment Corporation's VT100, or International Business Machine's IBM 3270. ■

Comparison Chart

Software version	Interlink ST[1] 1.80	Flash[1] 1.52	220 ST 1.01	ST Talk Pro[1] 2.0	PC/Intercomm 3.0	MI Term 4.0
PROTOCOLS						
Xmodem(CRC)	*	*	*	*	*	*
Xmodem/1K		*		*		
Ymodem	*	*		*		
Kermit		E	*	*	*	
ASCII	*	*	*	*		*
Quick "B"	*	*		*		
TRANSLATIONS/ EMULATIONS						
ASCII	*	*	*	*	*	*
VT52	*	*	*	*		*
VT1xx	*	*	*	*	*	
VT2xx			*	*		
CIS RLE				*		
Vidtex		*		*		
ATASCII	*	*				
IBM ANSI	*			P		
AUTOMATION						
Recording Facility	*			*		*
Scripting Facility	P	*		*		
Auto Dialer	*	*	*	*	*	*
Keyboard Macros	*	*	*	*		*
Bkgrnd. File Transfer	*	E				
TEXT EDITING						
# Buffers	-	-		10	-	-
Search & Replace	*	*		*		
Word Wrap	*	*		*		
Reformatting	*	*		*		
Block Operations	*	*		*		
REMOTE CAPABILITIES						
Password Protection	*	S		S		
Security Levels	*	S		S		
Messages	*	S		S		
File Transfer	*	S		S		

There are many excellent terminal programs available for the ST. Many are available for free in the public domain (see this month's Public Beat column) and commercially. Due to space limitations this issue, we have decided that, rather than review each one individually, we would present some of the more popular packages in a chart format. If you are looking for a telecom package with certain features, you can check, quickly, which one has the features you need. If some of the terms used are unfamiliar to you, check Stephen Couchman's "Techie Telecommunications Tidbits" glossary elsewhere in this feature. For more detailed information, contact the individual manufacturers directly.

Interlink ST Intersect Software	$39.95 U.S.	$49.95 Cdn.
Flash The (Antic) Catalog	$29.95 U.S.	$44.95 Cdn.
220-ST Michtron	$49.95 U.S.	$59.95 Cdn
Mi-Term Michtron	$29.95 U.S.	$39.95 Cdn.
ST-Talk Professional QMI	$39.95 U.S.	$49.95 Cdn.
PC/Intercomm Mark of the Unicorn	$124.95 U.S.	$149.00 Cdn.

E - Available at extra cost
P - Partial implementation only
S - Available through script programming
[1] Programs are expandable through DA pipeline (Translations/emulations and protocols will become available for free or for a minimal fee)

THE LOCAL SCENE

William Demmery

In the world of telecommunications, the local scene is seldom recognized by the media, for the same reason that local sports are only given local coverage. And yet--also like local sports--the local telecommunications community is where the grassroots action occurs. People, young and old, "gather" on local Bulletin Board Systems (BBS) to share ideas and information on a rela-

ATARI - Alive and Well on CB-CHAT

Ken Watson & Bob Gagnon

(CB-Chat / Atari Administrators)

It's Sunday night. Ken from Elsa, Yukon joins Bob from Ottawa, Ontario; Eric from Alder Flats, Alberta; Clive from Tantallon, Nova Scotia; Dugald from Vernon, B.C.; Leslie from Montreal, Quebec; Bill from Meddley, Alberta, and Paul from Moosonee, Ontario in a live computer conference about new and interesting goings on in ATARIland. This miracle of live Trans-Canada conferencing is being done using a service called CB-Chat.

CB-Chat is a computer conferencing network, messaging system and software database available on iNet 2000, Telecom Canada's nation wide information network. CB-Chat will allow you to do live conferencing, via your computer, with dozens of other computer users. These other users can be from anywhere in Canada since iNet provides toll free access everywhere in Canada. In addition to this, CB-Chat provides special interest databases where you can find public domain software, or leave and retrieve messages. Several other features, such as password protected data exchange (useful for business users), international conferencing, and on-line multi-user games are being implemented.

You will find ATARI on CB-Chat as well as other specific computer brand boards. There are also special interest boards which cover wide ranging topics from politics to science fiction (maybe these two are not good examples of the wide spread of topics, but you catch the drift). Separate boards for the Atari 8 bit computer and the ST line of 16 bit computers are also available. The boards are split into a message area and a software exchange area. In the message area you can ask questions about Atari computers, pass on any useful information you may have, or answer questions from other users. In the software exchange area you will find a very large database containing the latest PD programs ranging from games to utilities.

The CB communicator is one of the more interesting sections. Like a CB, you will find the communicator divided into channels. One of the channels is the Atari conferencing channel on which we hold regular meetings every Sunday night. Most of the other channels are general channels where you can pop in anytime and chat to any other users who may be on. You can meet some very interesting people on CB-Chat, especially late at night.

CB-Chat is only one of the services that can be accessed through iNet. INet also provides a sophisticated E-MAIL service (ENVOY 100) where you can send messages to any of the other 40,000 users on the system. You can also send messages to non computer users via Canada Post's ENVOYPOST service. You can direct dial to BBSs or individual computers in most Canadian cities with a service called OUTDIAL. The cost for this service is a fixed $7.50/hr. If you are calling from Ottawa to Vancouver this sure beats long distance charges. INet also provides access to several thousand different databases, including stock quotes, sports networks, university databases and other pay services such as CompuServe, Delphi and The Source.

A free subscription to iNet is available through EntreNet Systems, the operators of CB-Chat. There is a fixed user charge of $3 per month and online time varies from $7.50 to $12.00/hr, which is cheaper than most other telecommunication networks (such as CompuServe or Delphi). Another advantage, of course, is that this is an all Canadian service, the only one of its kind. If you would like a free subscription to iNet, write or call:

EntreNet Systems 775A Ridgewood Avenue Ottawa, Ontario K1V 6M8 Tel: (613)737-7327 Envoy 100: ENTRENET.1

They will be more than happy to provide you with free registration to iNet. All you need is a modem and your Atari. Hope to see you there! ■

Bob Gagnon of Alfred, Ontario and Ken Watson of Elsa, Yukon are the Atari administrators on CB-CHAT. They are hobbyists who enjoy helping fellow Atari users. Ken, who has been an Atari user since 1982, started an Atari user group in 1983 and still runs one today. Bob was one of the original ST buyers in 1985, and after upgrading a few times has decided to save his pennies for a Mega ST.

tively direct level. Unfortunately, there are many problems on the local scene; some bulletin boards illegally offer copyrighted software; many callers cause problems, due either to ignorance or mischievous intent. Little has been said about the responsibilities of both system operator (sysop) and the users of these local online services; let's take a look at what's involved on both sides.

The Duties of the Sysop

Many of us call BBS's and take them for granted. Sometimes we pay a small fee for this; but whether we do or not, we expect the board to remain in operation; we expect information to be maintained and updated; we expect prompt assistance with any troubles or quirks we discover in the system. Sometimes things are almost ideal; but in other instances, it seems as though the BBS is pretty much left alone. The sysop is seen as being in a glamorous position, and for that reason, many people start boards of their own. Unfortunately, many of these boards disappear even more quickly than they appear, usually because the beginning sysop wasn't aware of the responsibilities involved.

A basic BBS setup requires three things: a computer and such peripherals as are necessary; a phone line; and a BBS program. Each of these usually costs money--provided, of course, by the sysop. The sysop must then take the time to set up and configure the BBS to his liking. This can take ten hours or even more; there are text files to be edited, special screens to be created, message areas to be allocated, and on goes the list. Next, the sysop must advertise the existence of his board (eagerness usually makes this easy). Once the board is in operation, it is up to the sysop to validate callers (unless he has, for whatever reason, left his BBS open even to first-time callers), maintain the various files and make frequent backups of critical files (such as the user list) and monitor uploaded software. This can be a problem, because there are many modem owners who seem to feel that the transferring of copyrighted software via modem is perfectly acceptable.

If any trouble develops on the board, it is up to the sysop to ensure that the problem is fixed. Occasionally, he will find it necessary to remove a user from his board, usually due to a violation of the rules the sysop has set out. All of this work--usually performed on an unpaid basis--adds up to a number of hours per week. A good sysop will keep his board shipshape and help his callers to use it efficiently. Again, this is work--not to mention the fact that, for the most part, the hardware used to run the BBS will be unavailable for any other use. And what does the sysop ask for this? Very little, usually--except, perhaps, for cooperation and a reasonable level of conduct.

The Duties of the Caller

The caller is the one around whom the whole idea of the BBS is based; without callers to make use of the system, the investment in hardware, software, time and effort would mean nothing. Callers post messages and share information among themselves; they also share software and other files and thus assist in the widespread distribution of Public Domain material. The caller, like the sysop, has some responsibilities if he is to make a positive contribution to the telecommunications community.

The most important rule of thumb to follow is to act responsibly. If the sysop requests that you not use foul language on his board, then don't; if he asks that no copyrighted software be uploaded to the BBS, it would be in your best interests to comply. If message areas are set up by topic, then you should ensure that the messages you post be in the right areas. This you should consider to be your part in keeping the BBS in order.

One of the biggest problems encountered in any local telecommunications community is fighting. It doesn't take much to start a fight; a little sarcasm, a hasty remark about a brand of computer other than your own, an observation--however impartial--of another user's personal traits, even a remark made in fun, all of these are almost guaranteed to start some sort of spat. Remember, any message you post will be read by many other users--denying the user who is the target of your remarks a chance to exhonerate himself at the time. Younger users, especially, are prone to a hasty, and probably rude, response to any messages they feel to be unfair. And the fight, once started, is not apt to die down quickly. Often, other users take sides and enter the fray. The best thing to do, if you feel slighted by a message, is to send private mail to the author of the message and ask for clarification.

There are some other guidelines that, if followed, will make life much easier for both yourself and your sysop. I am a sysop myself, and the biggest annoyance to me is the steady procession of users who wish to "chat" with me online. Now, I'm not averse to breaking in for a couple of minutes, if the user is having trouble with something on the board or needs to get in touch with me quickly--but at least nine times out of ten, he just wants to shoot the breeze. Please, if you really don't need to chat with the sysop online, don't call him. It's quite possible that this will actually increase the likelihood of his answering, when you really do need to chat.

On to more sinister things. It's not a good idea to post messages asking for help with "pirated" (illegally copied) software. Unless otherwise told, you may safely assume that your sysop wants no part of it and certainly doesn't want to encourage piracy. Remember, of all those whose reputations suffer most from piracy, the sysop is at the top of the list. One thing that he *will* appreciate, though, is feedback from you, the one who deals with the system from the other end of a phone connection. If you have a request or an idea you think will make the system more attractive, then by all means, let the sysop know. If you *don't* like something, tell him so. And if you just plain like the setup, well, the compliment will surely be welcome.

I might mention that attempting to "crack" (gain unauthorised access to) or "crash" (cause damage to) *any* online service is a crime and serves only to further tarnish the reputation of the "hacker". In addition, such activities may very well bring repercussions (perhaps in the form of strict regulations or telecommunications surcharges) against the whole community. Is that really an "accomplishment"?

Conclusion

Local telecommunications can be very rewarding as a form of interaction and a source of information and assistance; but we all have responsibilities. The sysop works very hard to keep his system going; in turn, the user should keep a level head and follow the rules. Participating in illegal activities online is far from being a "rite of passage" or "freedom of expression"; it's simply irresponsible and, in the long run, self-destructive. If you just keep in mind that you're in it together with everybody else, you'll make a positive and enjoyable contribution to the telecommunications community. ■

BBS Networks

William Demmery

An interesting twist to the usual fare of "stand-alone" bulletin boards is the concept of BBS networking. Although this is still a rare feature in ST telecommunications community, it is already well established in the MS-DOS world, where the Fidonet(tm) BBS network has been relaying messages between BBSs for several years.

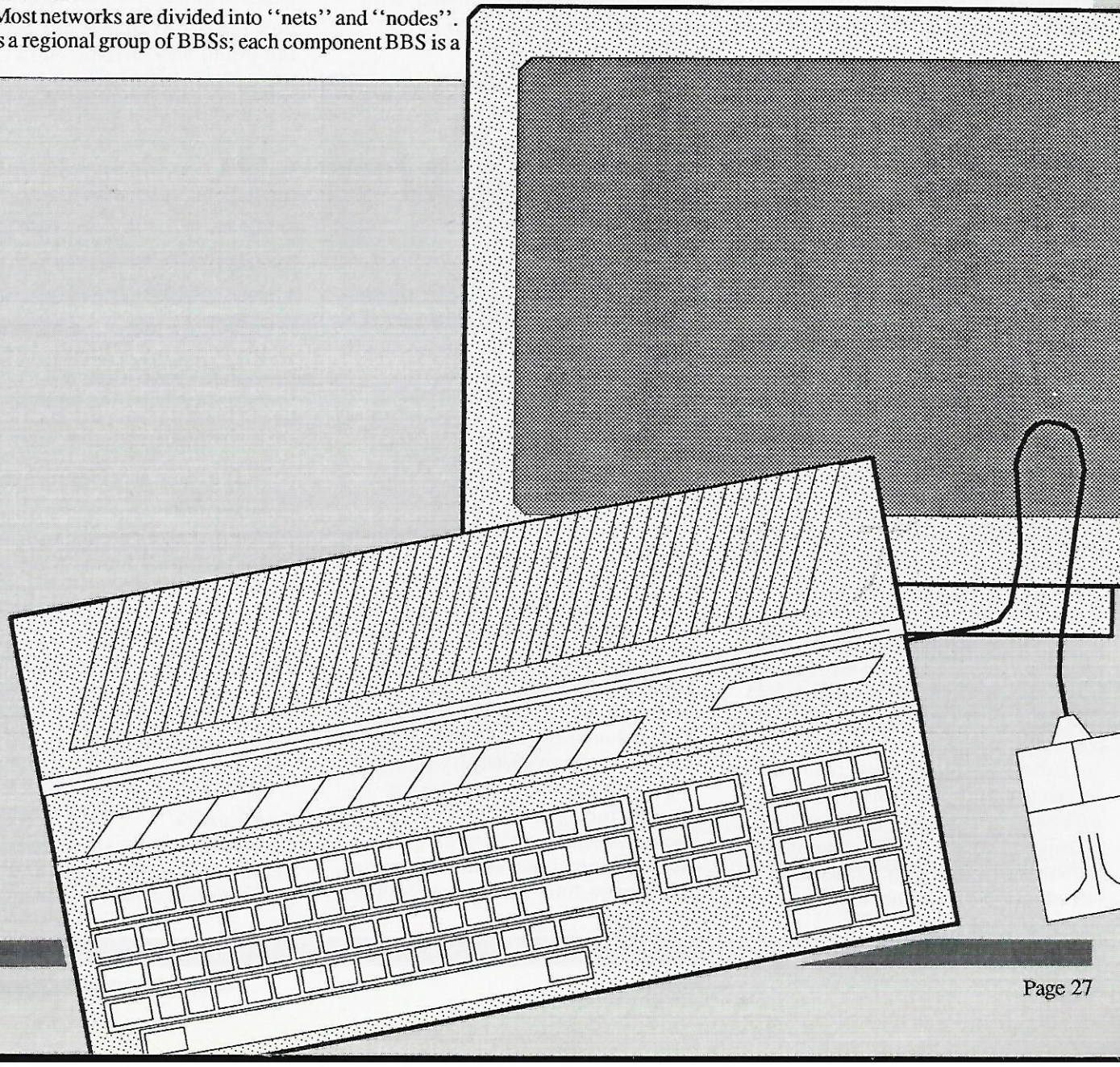
The way in which BBS networks operate is simple: one BBS calls another and messages are exchanged. These messages can be of two types: personal messages, which might be thought of as long-distance or inter-BBS e-mails; and "echo" messages, which are shared my a number of BBSs and permit public discussions among callers separated my great distances.

Most networks are divided into "nets" and "nodes". A net is a regional group of BBSs; each component BBS is a node. Thus, to be able to send a message to a friend who lives outside of your local area, you need know only his username, and the network and node numbers of the BBS on which he'll receive the message.

"Echo" messages allow a mass conference to be held between the users of many different and widely-separated BBSs. For instance, I regularly participate in the shortwave radio listeners' echomail conference. I can read messages posted by people from all over North America and any messages I enter are distributed around the continent--and sometimes beyond. Is this great, or what?

Of course, long-distance calls cost money. Most local networked BBSs have to make them from time to time in order to send external mail on its way. So, you'll probably be asked to send in some money before you're able to actually make use of the network facilities.

Is it worth it? If you have a need for the long-distance e-mails or the echo conferences (and there are many to choose from), then it most certainly is. ■



Atari In The Great White North

Bob Thompson

From my window I can see that the ice is almost off the lake now ... time for summer in Canada! Hopefully by mid July we'll have our two week swimming season, before the ice closes in again.

Earlier this year some of the staff of RESET Magazine went on a field trip to check out the world's largest, fully automated, 3" diskette manufacturing facility in Arnprior Ontario. Located just 60 kilometres (40 miles) outside of Ottawa (Canada's Capital), the 70,000 square foot KAO-DIDAK plant can produce two million diskettes per month--on a full three shift, 24 hour a day, seven day a week production schedule.

Background

KAO-DIDAK was established in May 1986 as a result of the merger between KAO Corporation from Japan (with over $3.2 Billion U.S. in annual sales) which owns 80%; and DIDAK Manufacturing Limited of Arnprior Ontario which owns 20%. DIDAK was created in 1983 when the three founding engineers built a 20,000 square foot 5" diskette manufacturing plant in Arnprior. By 1985 DIDAK was at full capacity producing five million disks annually.

However, fierce competition had driven the unit price down so far that with the reduced profitability there was little left for re-investment for growth and expansion. Since the introduction of advanced technologies such as the 'wet end' coating capability can cost over $100 million, DIDAK actively sought a new partnership to provide the capital needed for expansion, with the resulting merger with KAO Corporation.

KAO-DIDAK executives: (from left to right) Gideon Vardi, Vice President, Marketing & Sales; James Wilson, President (seated); Dr. Nobuyuki Kishine, Vice President, Engineering; and David Tait, Vice President, Manufacturing.

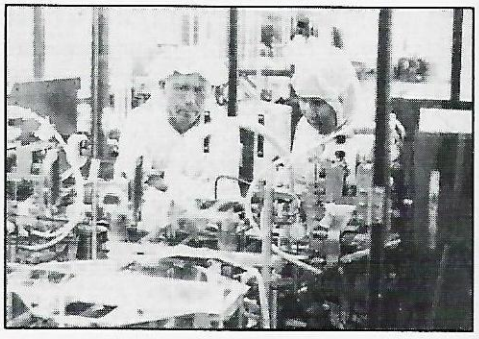
The Plant

The building is sized to accomodate additional production lines to increase the capacity to 80 million diskettes per year by late 1988, and up to 150 million annually by 1990. Even with over 120 employees, the actual product is not touched during the manufacturing process.

The long term objective is for the plant to become vertically intergrated in producing 3" diskettes by locally manufacturing all of the components. Each diskette has 16 working parts including precision metal stampings, non-woven liner fabric, and Mylar magnetic coating. Presently the plant produces most of the components including injection moulding of ABS resins, die cutting of lint-free liners, polishing of the media, automated assembly, 100% testing, and specialty packaging. The manufacturing process is completed within a class 10,000 clean room.

The Market

About eighty percent of the products are for export, mainly for the United States, Europe, and the Far East. KAO hopes to capture at least twenty percent of the potential world market. Until now, most of the production from the Arnprior plant has been under the 'Axiom' brand name. However, the 'KAO' line is now readily available in Canada, and the brand was introduced to the United States at the November '87 Comdex.



Wearing protective clothing known as 'space suits', KAO-DIDAK production technicians monitor the shutter assembly line in the 3 1/2" diskette plant's environmentally protected Clean Room.

All diskettes are manufactured to certain clipping levels (the way to identify signal retention), and KAO diskettes are aimed at the high end premium range, for users who demand quality, and want to guard their data. High data retention allows for long term storage, and is more forgiving for variances and problems with drives.

The Future

Already 2 megabyte disks are being used with the PC2, and the next generation disk will be 4 megabytes.

From a physics point of view it is quite possible to go to far higher densities, but the stumbling block is in the limitations at the mechanical end--in the drive technology. At 135 tracks per inch stepping motors in the drives must be precise, but if the density of the coating goes to say, 400 tracks per inch, it is doubtful if an electrical/mechanical servo motor could handle it.

The drive people are looking at different types of pickups. Materials already exist, and are being tested, in the form of 'Glahard' (glass like carbon) to be used in the drives for pickup. This process represents the marraige of chemistry technology in diskette manufacturing to chemical technology in other materials to come up with a product for the drive heads.

It is quite possible that within ten years we could have a 20 megabyte 3" diskette. Other products already in existence include digital cameras (by Minolta and Kodak) that use 2" diskettes.

So much for our dip into the realm of Canadian diskette technology. Next issue we'll see what else is happening with the ST here in the Great White North. ■

The Atari PC2

William Demmery

The PC2--the second in a series of IBM-compatible machines announced by Atari--is now available in Canada. Following its late-March release, the PC2 has stirred a great deal of interest and reportedly is selling very briskly.

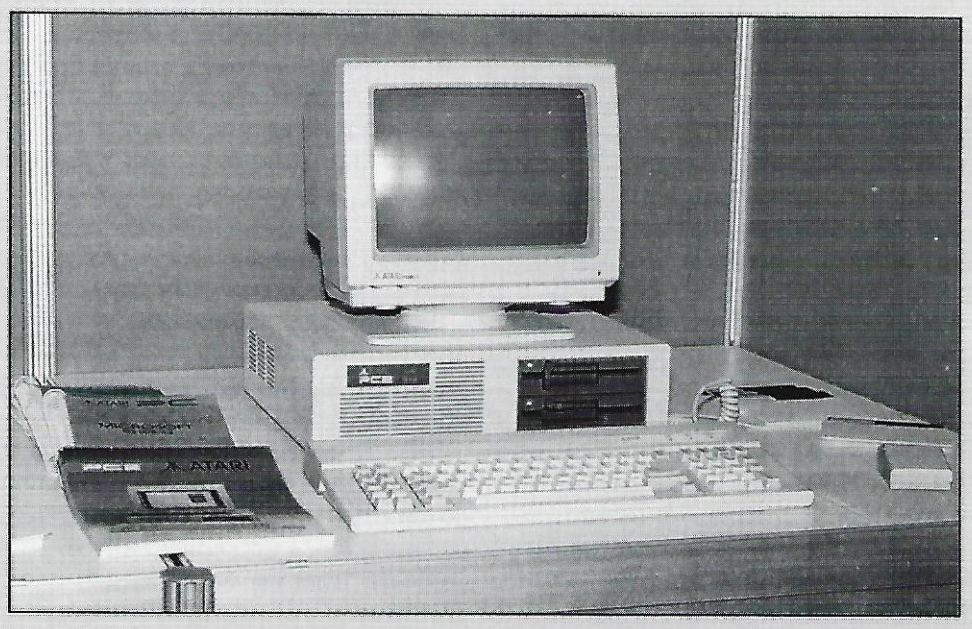
I must say this: the PC2 is a very professional-looking machine. Built into a white-finish metal (yes--metal!) case, it looks crisp and solid and proudly bears the Atari name and logo. And, the PC2 is a real computer: it even has a fan! The monitor--an amber multisync--has a ball-type swivel mount which rests comfortably atop the computer and allows you to make adjustments smoothly and easily. All connectors and switches are located at the back of the machine and are clearly labelled. All in all, the PC2 is very pleasing to the eye; yet, unlike most other recent entries into the IBM-compatibles market, it does NOT look like a piece of next-generation battle gear.

The list of the PC2's standard features is impressive: a software-switchable 4.77/8mHz processor; 512K of RAM on the mother-board (expandable to 640K); two 5-1/4" floppy disk drives; five IBM XT-style expansion slots; printer, serial, video and mouse ports; software-selectable CGA, EGA and Hercules Mono display modes; the Atari PCM1 serial mouse; MS-DOS, PC GEM plus a number of GEM applications; the monitor, of course; and about a kilogram of documentation. The PC2 recently acquired for the RESET office has, in addition to the basic configuration, a 20 Mb internal hard drive, a full 640K RAM and a 3-1/2" drive in place of one of the 5-1/4" units. A system like this is of great use in a business setting and, at $1495 Cdn. for the basic system, rather attractive.

I was impressed with some of the little touches Atari has added to the machine. For instance: you can switch between the 4.77 and 8 MHz clock speeds, change graphics modes and enable or disable key-clicking--all from the command line. Great! By the way: PC GEM may be an attraction for MS-DOS users, but to most ST owners, I think it'll be a bit of a letdown (not Atari's fault).

The keyboard is crisp and light--just the way I like it. The mouse is, well, just like a white ST mouse. The monitor is sharp and detects display mode changes instantly; it uses grey-scaling to handle colour graphics and does a good job of it, at that. In fact, I just couldn't find anything about the system to dislike (apart from the fact that it's NOT an ST).

Atari has been looking for a foothold in the business computer market; I think that with the PC2, they'll have that foothold, and more.■



The Atari PC2

Updates

•Word Perfect Corp. is now shipping the newest version of Word Perfect, dated April 15, 1988. It is a free upgrade to registered owners. In Canada, contact J.B. Marketing. New features include improved printer support, a print spooler and a conversion utility to convert data from other popular word processor formats.

•Personal Pascal version 2.02 is now available from ICD Inc.. Owners of version 1.x can send their disks, manual and $30 to ICD for the upgrade. Owners of version 2.0 or 2.1 need only send in the disks and $10 for the upgrade.

•Interlink ST is now at version 1.8. The latest version includes an improved down-loading accessory (Multixy) that allows background downloading with three levels of priority, as well as Xmodem Checksum support. The new version is available from Intersect Software for $5 and the old disk.

•There is a patch available on Compuserve for Neocept's Word Up that fixes a bug that occurs when more than one graphic object is loaded into memory.

•FTL Games has updated Dungeon Master to version 1.2. All of the bugs related to the end of the game have now been fixed. Owners of earlier versions may send in their disk and a self-addressed, stamped envelope to FTL to receive the upgrade.

LASER C - A Product Preview

LASER C, by Megamax Inc. of Richardson Texas, is the newest version of Megamax C, the excellent C language compiler system for the Atari ST line. It is a complete development environment that includes a GEM shell, a compiler, a linker, an archiver/librarian, a resource construction program (for GEM resources), a make utility and many other UNIX-like utilities. The compiler supports the standard put forth by Kernighan and Ritchie and includes many language extensions. So all people interested in C programming, from the beginner to the professional software developer, will want to consider this package.

A complete review of this development package will be available in the next issue of RESET, but for those of you who would like to look into the system now, Megamax can be reached at: Megamax Inc.
Box 851521
Richardson, TX 75085
(214) 987-4931.

Current registered owners of Megamax C can receive the new LASER C package for $20 U.S..

GFA BASIC

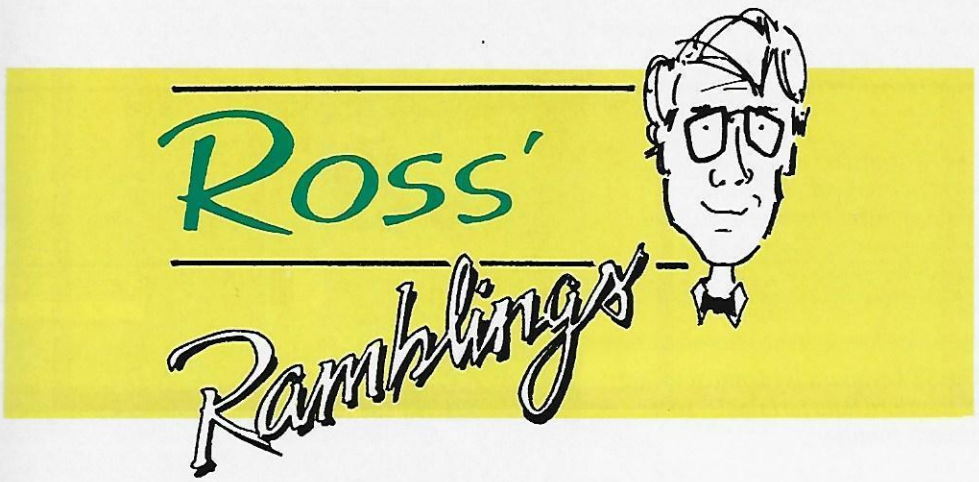
Since its introduction in mid-1986, GFA has become an immensely popular programming language for the ST. Its many features--high speed; the use of procedures; the powerful editor; the many commands not present in ST BASIC and the optional compiler--have made this a favourite of thousands of ST owners. The defacto "standard" language is also popular among recreational programmers. Now, Michtron has announced GFA BASIC, Version 3.0.

Version 3.0 is claimed to support over three hundred new commands, includingAES (Application Environment Services) functions, Line-A commands, joystick functions and bitwise operations (ie: "move"; "rotate"; "bit test"; etc.). Object-handling and management commands have also been added. Program operating speed is reported to be from 40% to 60% faster than that of Version 2.0--making the already fast GFA BASIC speedier still.

The editor has been improved in several ways. Most notably, the addition of a "hide procedure" function: on command, a procedure can be "hidden" from view so that only the procedure name itself is visible--a great help in debugging. In addition, a clock has been added to the menu field; up to 10 special "marks", to which one can quickly jump while using the editor; and a line-counter has been implemented.

GFA BASIC Version 3.0 is completely compatible with programs developed with earlier versions; thus, all GFA BASIC programs will benefit from Version 3.0.

Watch for this product to appear this fall.



Ross Judson

This month's column covers optimal disk configurations for programming languages. It is a bit technical and is directed squarely at those of you using a Pascal, C, or other compiled language. I intend to discuss ways of making the most efficient use of the space on your disks while producing the most efficient compiling and linking times possible. I will deal specifically with Mark Williams C v2.x, Megamax C v1.x, Personal Pascal, and Prospero Pascal.

Using a Mega

First of all, I'll deal with owners of Mega ST systems. Fortunately for you, there isn't very much involved in setting up a fast, powerful system with any of the above packages: simply create a RAM disk of 1.5 Mb and copy onto it your entire compiler package, together with its linker and shell (if any). You would be well advised to create a folder on the RAM disk called SOURCE, into which to place your source code; this is for organizational purposes, as well as to make it easier to transfer your work to hard disk or floppy.

Mega ST owners should be wary of the RDY RAM disk provided with Mark Williams C: certain versions of the program do not operate correctly with the new ROM chips in your machine. Be certain of the compatibility of your version of RDY before depending on it during the development process.

Using RAM Disks

A key point about using RAM disks while developing software: back up your work frequently! I suggest that you save your work every four or five passes through the Edit-Compile-Link-Run cycle. This applies even if you are using a "reset-proof" RAM disk--especially if you are working with C. A single rampant write to the wrong location can make even the best RAM disk lose its data and, in the process, cost you valuable time.

On a 520

If you are a 520ST owner, and familiar with the Pascal and C compilers for the ST, you are aware by now that it is a difficult fit into memory and disk space for you merely to use the language systems and is arduous, at best, to optimize a system to run quickly.

I have some tips for 520 users, since I once owned one.

First, buy a second drive; single-sided drives are available quite cheaply now, and nothing will make your life easier than a second drive to ease disk swapping nightmares.

If you can't afford a second drive, Mark Williams C is unusable. For the other packages, I recommend that you set up a 100K RAM disk for your source code. This will limit you to relatively small programs-- but you didn't want to buy that second drive to increase your storage, did you? Make sure that you keep on your diskette only those accessories that you absolutely need: accessories (especially the ones with resource files) can eat up memory at a tremendous rate.

For Personal Pascal, keep your complete compiler disk (with compiler, editor, linker and library files) in drive A; use drive B for your source disk. If you have relatively small sources and can fit them into a 100K RAM disk, do so: this will yield dramatic speed increases on compiles and links.

Prospero Pascal owners should do essentially the same thing as described for Personal Pascal.

Megamax C owners can do the same thing as well. The code improver, librarian and resource construction kit should go on disk B, though.

Mark Williams C owners will have to keep their disks set up exactly as they were shipped. Two versions of the MWC are available: one that was shipped on double-sided disks (the original); and a more recent version that was usable on single- sided systems. A tip: create a small (once again, about 100K) RAM disk, and place your source there. You will still have a substantial amount of disk swapping to do, but that's life; Mark Williams is really meant for hard disks.

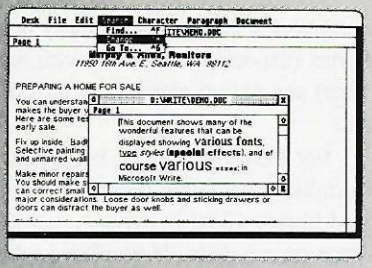
For 1040 Users

Owners of 1040 systems have a number of options available. In each case, it usually amounts to deciding whether you want to take around 400K of your system memory and devote it to a RAM disk, or whether you need that memory (for whatever reason) and want to go with a floppy disk system.

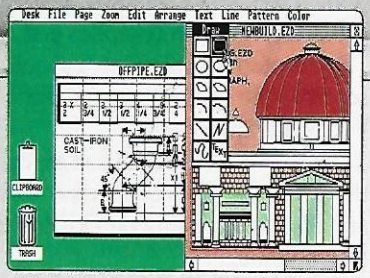
If you keep your compiler on floppy disk, consolidate multiple-disk compilers as much as you can. Place the whole Megamax C compiler system onto one disk; this will eliminate any disk swapping otherwise required. Make sure you have your compiler disk formatted double-sided. It is often convenient to have both your source files and your compiler system on the same disk.

I usually would recommend a mix of RAM disk and floppy-based disks. Source files (and compiler temporary files) are best placed on RAM disk. You should try to get

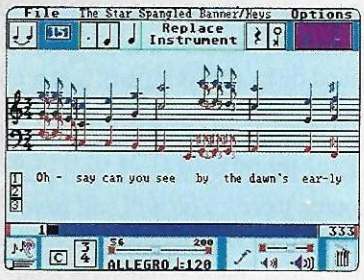
continued on page 61



Word Processing



Graphics & Design



Music Composition

The ST features familiar icons, spectacular graphics, mouse control windows, drop-down menus and on-screen directions for ease of use.

The ST transfers data at 1.33 megabytes per second. Which means it could transfer the entire works of Shakespeare in less time than it takes to read this ad.

The ST keyboard is identical to that of standard data terminals, so it's already familiar.

Introducing technology

Finally, there's a personal computer that not only solves problems like other computers, but also solves the one problem other computers created. Affordability.

Introducing the ST™ Computers from Atari: The 520ST™FM with a 512K memory and the 1040ST™ with a full megabyte. The ST was designed utilizing the most recent breakthroughs in semiconductor technology, producing a PC that does more tasks with fewer parts.

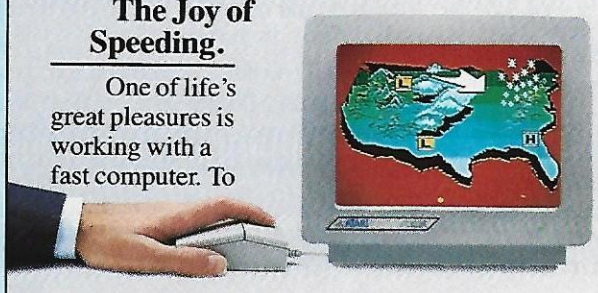
Which means it costs less to make. And less to buy.

The Joy of Speeding.

One of life's great pleasures is working with a fast computer. To bring the ST up to speed, Atari starts with the Motorola 68000 chip—the same "brain" you'll find in the Macintosh.™ Then, Atari adds the extra oomph of four exclusive chips—specially designed to handle several functions simultaneously. (Other PCs limp along handling one function at a time).

This results in making the ST much faster in the computing process. Faster in moving data within the system. Faster in getting information to the screen.

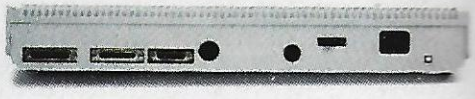
So now, you can run programs like word processing, database management, and financial planning with more zip and efficiency than ever before. A nice feeling.



Compare Our Components.

A computer is only the sum of its components. So we made each one better. Look at the layout of the ST keyboard, for example. You get a full numeric keypad. Plus a cursor control keypad with editing keys. Plus 10 programmable function keys. Now add the mouse and consider the options.

The monochrome monitor is a beauty. Taking its broad bandwidth signal from the ST's exclusive video chip, it displays a resolution of 640 × 400 pixels. This gives you razor-sharp, jitter-free text display for word processing and CAD work (very easy on the eyes). Or, for stunning color images, add the RGB color



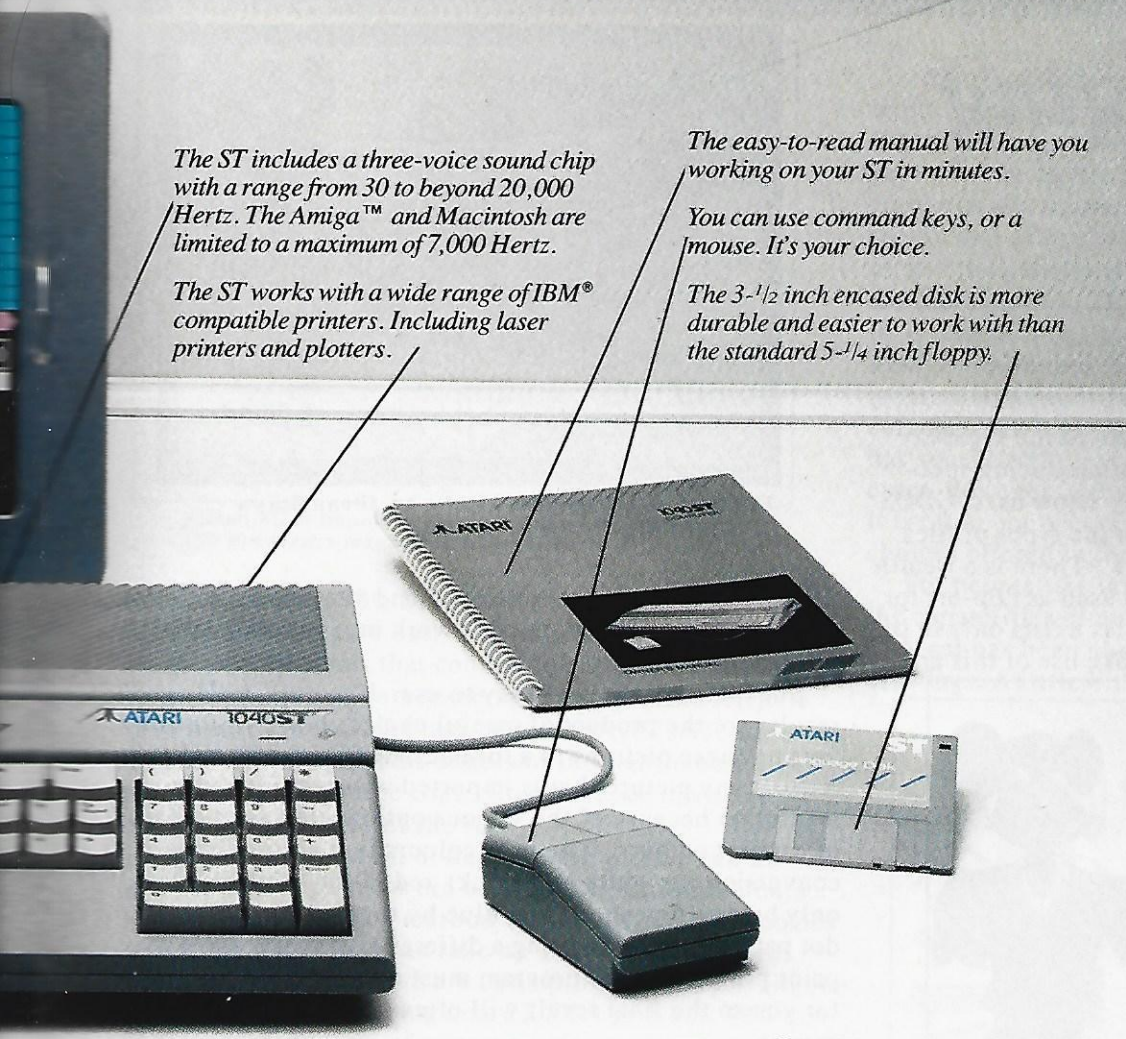
The ST includes a three-voice sound chip with a range from 30 to beyond 20,000 Hertz. The Amiga™ and Macintosh are limited to a maximum of 7,000 Hertz.

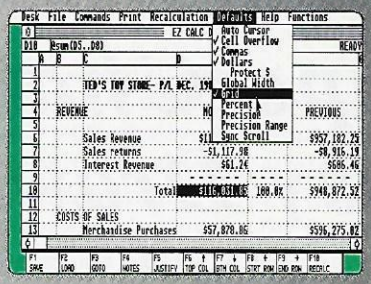
The ST works with a wide range of IBM® compatible printers. Including laser printers and plotters.

The easy-to-read manual will have you working on your ST in minutes.

You can use command keys, or a mouse. It's your choice.

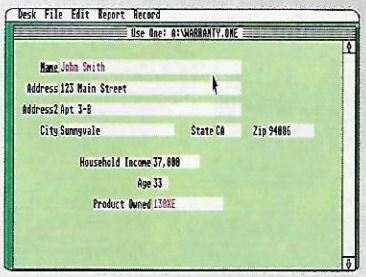
The 3-1/2 inch encased disk is more durable and easier to work with than the standard 5-1/4 inch floppy.





Spreadsheets

Entertainment



Database Management

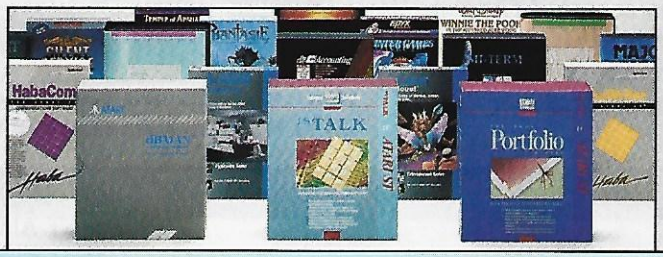
so advanced, it's affordable.

monitor. No interface board needed. Just plug it in. (Try doing that with a Mac!)

You get an external disk drive with the 520ST™. An internal, double-sided disk drive with the 1040ST. Both have a disk speed many times faster than previous PCs. And they're blissfully quiet.

Plus, many of the costly peripherals you have to add on with other PCs are already built into an ST. Like the built-in MIDI (musical synthesizer interface) port. And the industry-standard printer port and modem port. And for even more memory, a port for the SH204™ hard disk drive, with twenty megabytes of storage and the fastest transfer rate in the industry.

With hundreds of software programs already available, an ST can grow with your imagination, or your business. Companies like Microsoft,® Spinnaker,® Activision® and more are continually making contributions to the ST software library. And some popular programs originally designed for other computers are actually being upgraded to take full advantage of the ST's capabilities!



The Price of Power.

Best of all, the cost of an ST is so low, it may come as something of a shock.

That's why Info World called it, "The best hardware value of the year." Byte Magazine has said, "The ST is an amazing bargain, much more of a computer for the rest of us than the MAC ever was." And Family Computing summed it up by saying, "With the impressive ST, Atari has delivered on its promise of power without the price." There's an ST with the power you need at a price you can afford.

So now, you don't have to be rich to be powerful.

THE ST™ COMPUTERS from ATARI®

© 1986 Atari Corporation

SuperCharging Easy Draw

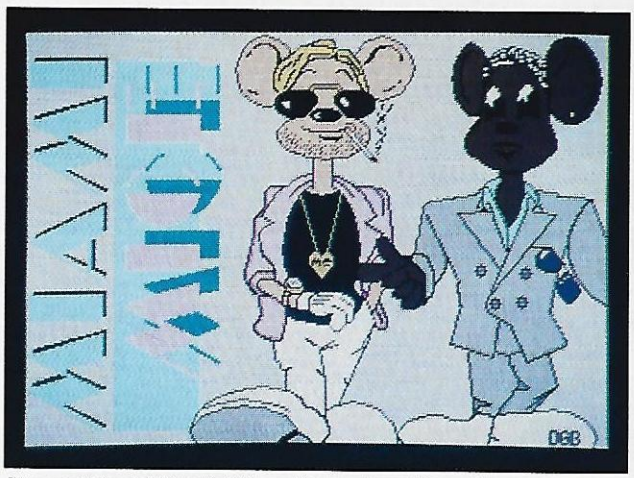
Terry Webb

Migraph's Easy-Draw has been on the market since early 1986 and has gained the reputation as one of the premier drawing programs for the ST, capable of producing spectacular dot matrix output. Because Easy-Draw uses GDOS to get this output, it has been limited in the types of files that can be incorporated into its artwork. There is a wealth of useable art and drawings that can be used as clip-art for incorporation into Easy-Draw, but this art exists only in the form that it was created. In order to make use of this art,

Miami Mice imported directly as a DEGAS PI1 picture.

Migraph introduced SuperCharger, an image processor that converts NeoChrome, Degas, Degas Elite and MacPaint files to the .IMG format that is GDOS standard. It also converts colour drawings to monochrome. Since very few printers are capable of colour output, and in order for the clip-art to have print quality consistent with the rest of the Easy-Draw page, the interpretation of the various colours is critical.

Most printers print only in black with no grey scale. Shading is achieved by using various densities or patterns of dots. When a colour image is printed, the different colours in the drawing will often produce a crosshatched pattern; this is the computer's and printer's effort at interpreting the information required to describe the colour. SuperCharger will read any resolution of the accepted file formats and translate the file into monochrome .IMG files. Because these .IMG files can be loaded into Easy-Draw or any other GDOS program that will utilize graphics, Super-

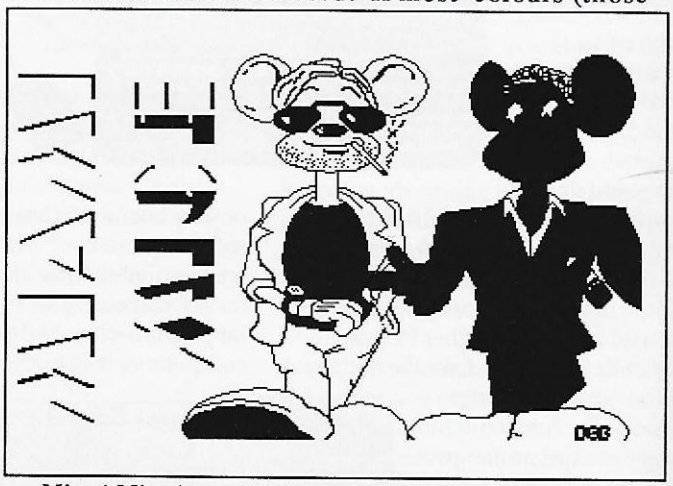


The original Miami Mice picture by Glenn Brown (PI1 format).

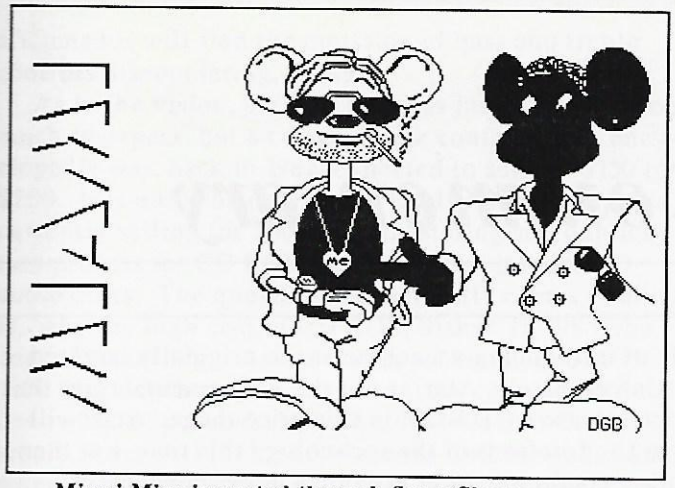
Charger becomes a very powerful and very useful tool that permits the incorporation of artwork into a great many programs.

SuperCharger is very easy to use. However, really good results are the product of careful choices made while converting these pictures to a format that GDOS will recognize. Almost any picture that is imported will require experimentation because of the various options that are available to convert colours. The only colours that are available after conversion are white and black; red in the original, can only be distinguished from blue by the use of a different dot pattern (just like using a different fill pattern in a paint program). The program must choose these patterns for you so the final result will often be less than what you expect.

The simplest way to convert colour is to change it to black. All colours changed to black give a very stark image with great blobs of solid ink. This option is of primary use in previewing. A sample print-out of the Miami Mice was almost completely black. There is no detail at all if all coloured areas were converted. If most colours (those



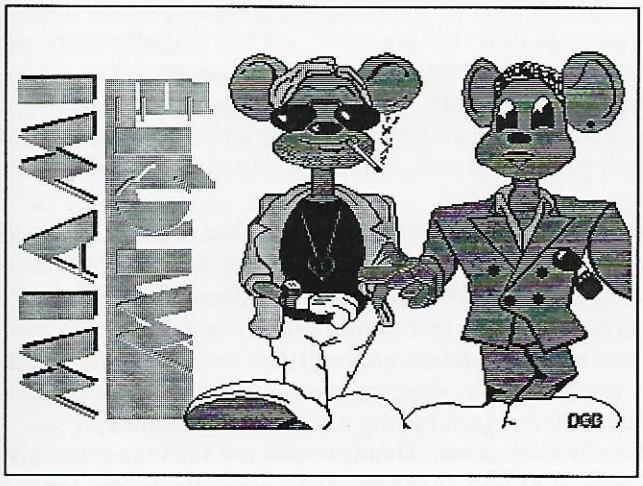
Miami Mice imported through Supercharger, most (70%) colours mapped in black.



Miami Mice imported through SuperCharger, some (30%) colours mapped to black

that were at least 70% black) were converted to black, the detail begins to come out. The only images that are really useable are the ones that contain relatively few colours or are mostly light colours (note the mouse on the left). If only colours with 30% black are converted (selecting "some colours"), then all details of the right mouse's suit are visible but the face isn't. However, we have totally lost the second word of the title.

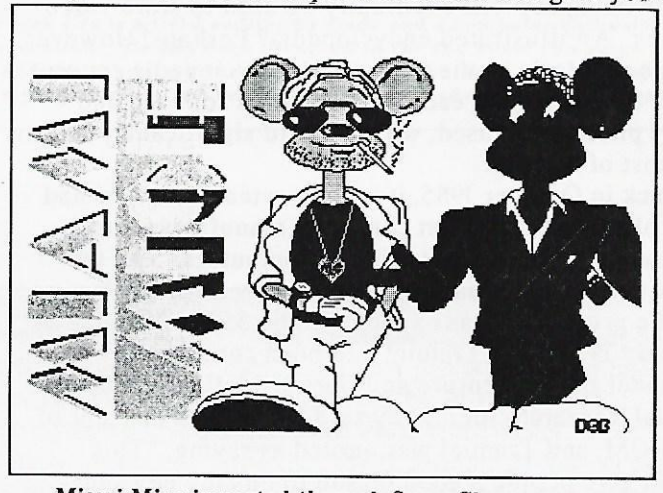
More detail and a bit of depth in the picture can be achieved if dot patterns are used for the various colours. The problem with this method is that the picture becomes very complicated and can take up an enormous amount of room on a disk. There are two options already available in SuperCharger, mapping on a 2X2 dot grid or a 4X4 dot. There is already a set of patterns in SuperCharger based on groups of pixels of the above two sizes. When a picture is loaded into the program, the colours are sorted according to the amount of black in each, and a dot pattern assigned. Darker images, such as the mouse on the right, look better at 2X2; lighter coloured images such as the left mouse look better at 4x4.



Miami Mice imported through SuperCharger, mapped at 2X2.

Rarely would we want a complete image, as art, to be imported into a program such as Easy-Draw, especially one that was in several colours originally. But SuperCharger provides the option to produce a table of patterns for each colour on the screen up to a maximum of 16. By loading the picture in low resolution and allowing the program to sort the colours and assign a pattern, excellent results can be achieved. The pattern selected for each colour can be changed, if desired, but the process is not only very slow, but also creates very large files. A fair bit of experimentation is needed in order to get useable results, particularly if the artwork contains a great amount of detail or has several different shades of similar intensity. In most cases, however, since only a portion of the original is used, it is often not necessary to go beyond the auto-mapping choices offered in the program.

For people like myself, who are constantly amazed at the capabilities of our computers, playing with SuperCharger has been almost as much fun as creating artwork drawings. A little bit of experimentation will give you the



Miami Mice imported through SuperCharger, mapped 4X4,

skills needed to import and convert almost any picture into the format that GDOS programs use. This will open a whole new area of document creation to the average user. ■

Terry Webb is RESET's printerguru--having owned just about every type of printer ever made. Terry's pride and joy is his new Mega 2 (a real computer, because it has a fan). He is also an administrator for a 250 member strong user club in the Ottawa area.

CD ROM: An Update With Commentary

Frank Eva

CD ROM, the magical mystery tour of the eighties, an invention that is staggering in its potential! Picture this; with just a single compact disk, the size of a standard audio compact disk, a computer owner would have access to an entire encyclopedia! Even then, the disk would only be partially filled. A formatted compact ROM disk is capable of storing 540 million characters, the equivalent of 6000 floppy disks, or 50 cubic feet of printed pages. An encyclopedia, with its index, would only amount to a little over a million characters. The additional space will eventually be used to store video images. An illustrated encyclopedia? Perhaps! However, a major obstacle to the illustrated encyclopedia concept is the cost of paying each photographer for each and every photograph used, which would significantly add to the cost of the disk.

Back in October 1985, it was reported that Atari had firm plans to be the first computer manufacturer to release a CD ROM for its line of computers. The targeted price would maintain Atari's new image of 'power for the price', and was expected to be $599. As early as January 1985, Jack Tramiel had been contacted by Tom Rolander of Activenture and Gary Kildall, chairman of Digital Research, Inc. They sold him on the concept of CD ROM, and Tramiel was quoted as saying, "This would give people a good reason to buy my new computer, wouldn't it?"

Not only would Atari be the first to provide CD ROM capability, but Atari was purported to have exclusive rights to the Activenture process for some time after release.

Yes, this just might be the kind of peripheral that would justify the purchase of a home computer--devices which have always been viewed by the vast majority of people as glorified doorstops, useful only for writing letters, and playing games. But, if they could be used to achieve access to an electronic encyclopedia, now that would be something! Owners of the electronic version would have easy and relatively inexpensive access to major updates of their encyclopedia. How many people do you know that purchase a Brittanica, will replace it every year with the latest version?

Visions come and visions fade. CD ROM has been available for some time now. However, Atari simply refused to release its own CD ROM player until it was capable of introducing a machine at the originally targeted price. Unfortunately, Atari is not the only manufacturer that will soon release a CD ROM in this price range. Atari will not be at the forefront of the technology this time, but then, what other computer could provide a more inexpensive interface to a CD ROM? After all, a CD ROM without a home computer engine is like a stereo without speakers! The nearest competitor, a 68000 machine called the Amiga, does not have a built-in hard drive interface. So, owners of the Amiga must purchase an add-on interface, to be able to use a CD ROM. If Commodore intends to manufacture a CD ROM for their own line of computers, perhaps they will build the interface into the player. It is obvious that this would substantially increase the cost of the player, and Atari would maintain its edge on the competition.

The new Atari CD ROM player, which should enter the U.S. marketplace during the early summer, perhaps May, will also be capable of playing standard audio disks. According to a spokesman at Atari, the CD player is basically a regular audio CD player enhanced with the addition of a DMA (Direct Memory Access, i.e. hard drive) port. The player comes with a detachable remote control unit that will allow direct programming of such functions as pause, fast forward, next track, back track, etc. Those individuals familiar with compact disk audio will notice some nice programming functions are missing. Do not fret, for Atari has prepared a desk accessory that will allow access to special functions, such as, programming only selected tracks, and repeating plays. Hopefully, Atari will incorporate a data search function into this accessory. This will allow the user to break off working with a word processor to search an encyclopedia, dictionary, etc., without having to shut the system down, boot a disk search program, find a topic, shut the search program down, and then reload the word processor.

Talking about a 'stereo without speakers', that is basically what you will get when you purchase the Atari CD ROM player! But again, there is no need to worry! The folks at Atari have thought of just about everything! If your workstation can't accommodate an amplifier and a matched pair of woofers and tweeters, you can use the headphone jack! Of course, that means purchasing a set of headphones, if you don't already own them. Headphones are far less expensive than an amplifier and speakers; they are appropriate for digital compact disks, and take up very little space. Audio

aficionados will find the omission of bass and treble controls disappointing, though.

As to the vision, perhaps this was just a little bit too much to expect, but a compact disk containing an encyclopedia was, back in 1985, expected to sell for $150 to $200. It is unfortunate, but the Grolier's Encyclopedia is currently selling for $300! The mastering and duplication process for CD ROM is the same as it is for CD audio disks. The question that naturally comes to mind is, 'why the high cost of CD ROM disks?' In 1985, the cost of producing a master was approximately $4000. If 1000 disk duplicates were pressed, the cost would have been only $4 per disk! Now, it's obvious that Grolier's would never sell their encyclopedia disk for under $50, when they probably get thirty times that much for the hard copy! But $50 to $100 would be more acceptable to the vast majority of home buyers. This points out a fact; there must be more competition in the field if the price is ever to come down to the point where the lowly home user can afford the product. Considering the cost of an Atari computer, an Atari CD ROM player, plus the Grolier's Encyclopedia, and you are already in the $1500 to $2000 price range. Most homeowners are hard-pressed to come up with that kind of down payment on a more necessary item, the family car, which must be replaced every two to seven years!

For those of us who are fortunate enough to already own the interfacing engine, we may be able to scrape up the $900 for the encyclopedia CD system. However, we probably won't be satisfied with just one data disk and each new compact disk will cost anywhere from $100 to $300. For example, MicroSoft's Bookshelf, containing a dictionary, thesaurus, and a few other goodies is currently retailing for $295!

One other item, as yet unaddressed by Atari, is the fact that disks like Grolier's Encyclopedia and MicroSoft's Bookshelf would require some type of driver program to interpret the information stored there. Atari's penchant for allowing third parties to develop software offers no assurance that once the Atari CD ROM players reach the dealers, there will be software available to drive the most popular compact computer disks. However, the Atari CD player will be very flexible, since the data format is not built into the unit, as it is in the Apple CD player. We'll just have to wait and see! ■

Frank Eva is a field auditor by trade and a computer enthusiast by avocation. He has been involved in the the home computer industry ever since the introduction of the Atari 400. He dabbles in programming and has had several text adventures published.

Attention Writers and Programmers!

RESET Reader Submissions Information

If you have an idea for an article that would be suitable for publication in RESET Magazine, please send it in. Articles can be reviews or tutorials--but be aware, our criteria is very stringent. We do not normally accept articles that are simply product evaluations or descriptions. Articles must show depth, a thorough knowledge of the topic, and appeal to both novice and expert on the topic in question (a dash of tips, tricks and hints is almost a necessity). Be careful though, if your article is too long, we probably won't be able to use it. As a rule of thumb, articles should never exceed 2,000 words. Also include a brief personal biography written in the third person. Screen dumps from programs should also be included in DEGAS or NEOChrome format. Michtron's ASHOT utility will let you do this, and there are also several similar public domain programs to accomplish this task as well.

Since RESET will soon be featuring a disk issue, we are also searching for quality programs. Please send in your program in a runnable format, and include the complete (well documented) source code. An article should also be included to explain the program.

All submissions must be on an ST format 3.5 inch diskette, and on paper. Documents can be in First Word, First Word Plus, WordWriter, or a straight ASCII format. If you would like your submission returned, please include a self-addressed, stamped envelope. Please allow a full 60 days for a response.

A complete author's guide is available upon request.

Do you have what it takes? If you do, RESET pays for articles used. So get working! Send submissions to:

RESET Magazine
Submissions
88C Jamie Avenue
Nepean, Ontario
Canada
K2E 6T6

The reviews are in . . .

"'A Best Buy' I'm impressed"
David H. Ahl, Atari Explorer, Nov-Dec 1987

"If you've got an Atari, you probably need this program."
Jerry Pournell, Byte Magazine, October 1987

"pc-ditto is a winner."
Charlie Young, ST World, July 1987

"This is the product we have been looking for."
Donna Wesolowski, ST Informer, August 1987

"This truly incredible software emulator really works."
Mike Gibbons, Current Notes, September 1987

NOW! RUN THESE IBM PROGRAMS ON YOUR ATARI ST.

Lotus 1-2-3	Flight Simulator	Framework	Symphony
Enable	Ability	DESQview	Q&A
Sidekick	Superkey	Norton Utilites	dBase II,III,III+
Crosstalk IV	Carbon Copy	Chart-Master	Print Shop
EasyCAD	DAC Easy Accounting	BPI Accounting	Turbo Pascal
GW Basic	Managing Your Money	Silvia Porter's	pfs:Professional File

And Hundreds More!

---

pc-ditto is a software-only utility which expands the power of your Atari ST to imitate an IBM PC XT. No extra hardware is required (an optional 5.25-inch drive may be required for 5.25-inch disks). All your IBM disks will work "out-of-the-box".

pc-ditto features include:

- o both the 520ST and the 1040ST supported
- o up to 703K usable memory (1040ST)
- o not copy-protected -- installable on hard disk
- o imitates IBM monochrome and IBM color graphics adapters
- o access to hard disk, if hard disk used
- o optionally boots DOS from hard disk
- o parallel and serial ports fully supported
- o supports 3.5-inch 720K format and 360K single-sided formats
- o supports optional 5.25-inch 40-track drives

System requirements:

- o IBM PC-DOS or Compaq MS-DOS version 3.2 or above recommended
- o optional 5.25-inch drive is required to use 5.25-inch disks
- o 3.5-inch 720K DOS disks require a double-sided drive (Atari SF314 or equivalent)

See pc-ditto today at an Atari dealer near you, or write for free information!

$89.95

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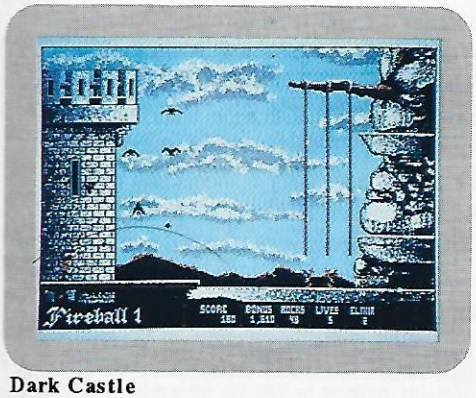
CIRCLE 113 ON READER SERVICE CARD

Mini-Reviews

DARK CASTLE (THREE-SIXTY PACIFIC)

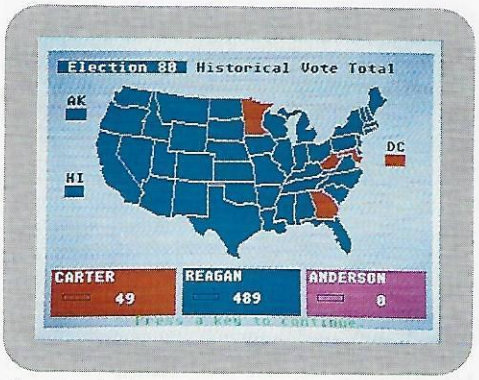
This popular game gives you fourteen danger zones to pass through before you encounter the Black Knight. Jump, duck and run past the guards of the Dark Castle; the handful of rocks you throw may not be enough. A mace, fireballs, and a magic shield may be needed in your quest. Excellent digitized sounds in this life- and-death arcade/adventure lead to a challenge to survive in the haunted house on the hill. This type of adventure game has been done before, but it still sells. $49.95 Cdn., $39.95 U.S.



Dark Castle

PRESIDENT ELECT (SSI)

Why wait for the primaries to wind down when you can run '88 Presidential race now? The game allows you to replay any election race from 1960 to the present. You have the ability to run 69 different candidates, from the real (such as John F. Kennedy), to running mates (Geraldine Ferraro), to what-ifs (Mario Cuomo). And, if you think you would make a better candidate, the game will rate you on your social, economic and foreign policy views. The game is introductory-level, with you acting as the campaign manager: decide how much of your budget you will spend on advertising, which campaign stops and at whom they will be directed. However, the game does not take into account past or present scandals, so you cannot see if Nixon could have survived another term, or how Contragate could affect Bush. $39.95 Cdn., $29.95 U.S.



President Elect

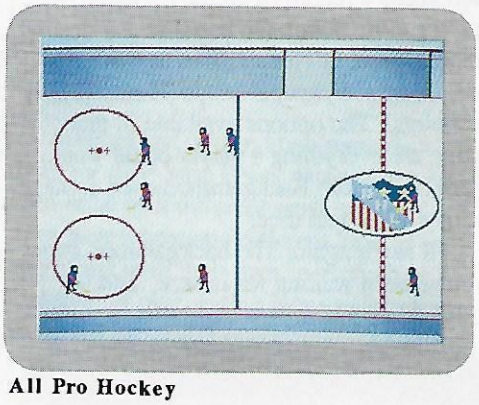
GFA BASIC QUICK PROGRAMMER'S REFERENCE GUIDE (ABACUS)

As you can guess by the title, Abacus has released a programmer's reference guide for the popular GFA Basic language. An alphabetical listing of all GFA commands contains examples and compact descriptions. Basic, TOS and Bomb Error messages are listed. A complete subject index and a quick index completes this "must-have" book for the GFA Basic fanatic. If you don't have GFA Basic yet, taking a look through this book will give you a good idea of what the language can do. $29.95 Cdn.

ALL PRO HOCKEY (REEVE SOFTWARE)

I've always liked sports simulations on my ST, but I don't have a hockey game. All Pro Hockey gives you a scrolling ice rink, 20 teams, overtime, player-trading and drafting. Select the player- managed teams, and the computer controls the rest of the league. Scores flash as the computer teams play against computer teams. When a player-managed team is in the schedule, you're into the real game, and...

I'm still looking for a hockey game for my ST. $49.95 Cdn., $39.95 U.S.

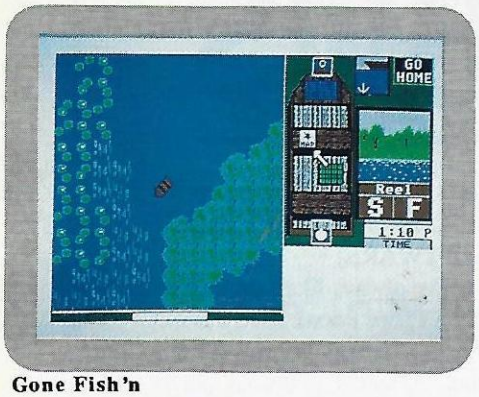


All Pro Hockey

GONE FISH'N (INTERSTEL)

No, this is not another Starfleet module to send your officer on some Terrain R&R. Believe it or not, it's a bass tournament fishing simulator from Roger Damon, who is known for his strategy games. This simulation has you fish, tournament-style, for a whole season, with you deciding on the best days to go fishing each week. As your goal is to succeed in the tournaments, pick the best days, and do not forget to pay the daily fee. The game lets you examine eight lakes, to determine the possibility of hooking the big one. Stop off at the tackle shop to pick up any one of 12 lures, or, when you make the big bucks, get yourself

a depth finder. Once on the lake, decide what lure to use, and when you get a bite, be sure to reel it in nice and easy. $49.95 Cdn., $39.95 U.S.

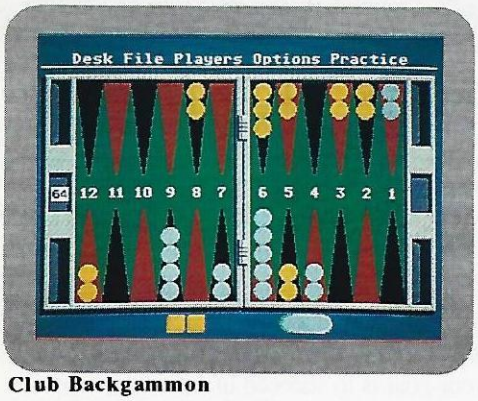


Gone Fish'n

CLUB BACKGAMMON (LOGICAL DESIGN WORKS INC.)

The backgammon game you've been waiting for is here. Club Backgammon provides all the challenge you want, with three distinct difficulty levels. A log function keeps a record of all moves made during a game. Set up the board in any desired combination, or change sides at will. An automatic scorekeeper keeps a running tally of points. The options available in this game are everything a player could want. For effect, Club Backgammon even comes with a set of real dice.

I'll say it again: The backgammon game you've been waiting for is here. $44.95 Cdn., $34.95 U.S.



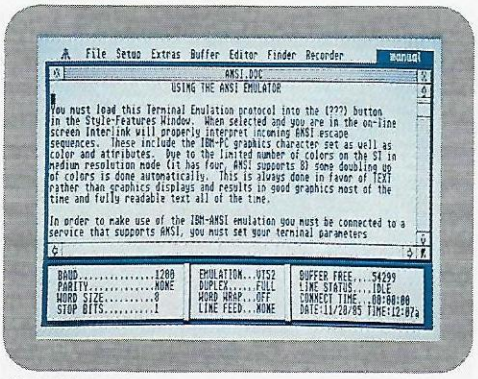
Club Backgammon

GENERAL MANAGER/OWNER DISK (MICROLEAGUE SPORTS ASSOCIATION)

Still think some of the recent trades will not benefit your team? Well, now you can get the player needed to shore up the bullpen, or provide that extra hitting power, with this utility disk for MicroLeague Baseball II. Not only can you bring back or trade players; you can also draft your own team and run electronic baseball leagues. For those who want to keep track of the Jays or Expos, you can use the "Edit" function to update the players' actual stats and account for mid-season trades. Who knows--maybe you can lead them to an all-Canadian series! (Microleague Baseball II required). $39.95 Cdn., $29.95 U.S

INTERLINK 1.80 (INTERSECT)

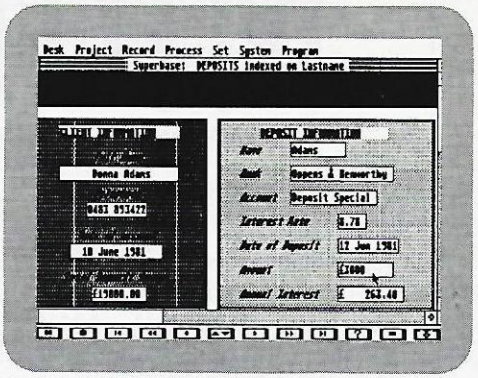
This latest version of Interlink ST provides several new features to ST telecommunications packages. Provided with Interlink is a VT100/PC-ANSI emulator and a background downloading accessory similar to Shadow for Flash. Interlink is a user-friendly package that should give other comm packages a run for their money. $49.95, $39.95 U.S.


File Setup Extras Buffer Editor Finder Recorder
manual
ANSI.DOC
USING THE ANSI EMULATOR
You must load this Terminal Emulation protocol into the (???) button in the Style-Features Window. When selected and you are in the on-line screen Interlink will properly interpret incoming ANSI escape sequences. These include the IBM-PC graphics character set as well as color and attributes. Due to the limited number of colors on the ST in medium resolution mode (it has four, ANSI supports 8) some doubling up of colors is done automatically. This is always done in favor of TEXT rather than graphics displays and results in good graphics most of the time and fully readable text all of the time.
In order to make use of the IBM-ANSI emulation you must be connected to a service that supports ANSI, you must set your terminal parameters
BAUD.....1200
PARITY.....NONE
WORD SIZE.....8
STOP BITS.....1
EMULATION...VT52
DUPLEX.....FULL
WORD WRAP...OFF
LINE FEED...NONE
BUFFER FREE...54299
LINE STATUS...IDLE
CONNECT TIME...00:00:00
DATE:11/20/85 TIME:12:07a

Interlink ST

SUPERBASE PROFESSIONAL (PROGRESSIVE PERIPHERALS AND SOFTWARE)

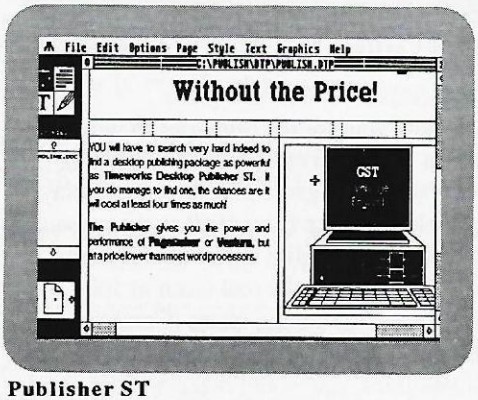
Superbase Professional is a high-powered, integrated relational database package. Significantly improved over the 'Personal' version, SBP offers a full-blown, visually-oriented GEM interface and great flexibility in designing entry and display formats. A built-in BASIC interpreter, including extensions for database control and GEM functions, allows you to create your own customized applications. Text editing is just a mouse-click away, and a mail-merge facility makes it easy to create form letters which will draw variable information straight from the database. One minor nuisance: copy- protection (using the key-disk system, to allow for installation on a hard drive). $ 359.95 Cdn., $299.95 U.S.



Superbase Professional

PUBLISHER ST (TIMEWORKS)

The latest entry into the ST personal publishing market, Publisher offers many powerful features. Output from TP is available either through one of many GDOS printer drivers or via Postscript. Publisher can import text and graphics from many popular ST and IBM formats, including WordWriter, First Word, Word Perfect 4.1, Easy Draw (.GEM), GEM Paint (.IMG) and DEGAS (.PI?). The user- interface is borrowed from Xerox's Ventura Publisher, as TP makes use of style sheets and tagging. As is usual for Timeworks' products, Publisher includes a very detailed and complete manual along with a high-level of customer support. ($189.95 Cdn., $149.95 U.S.)

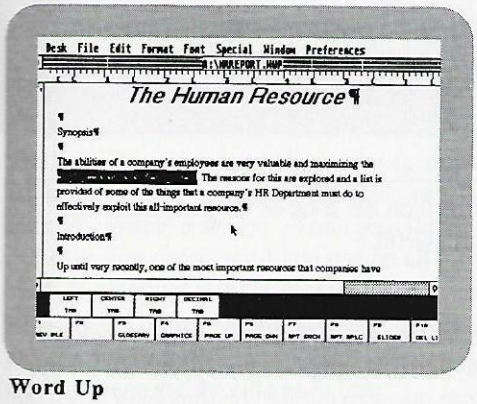


Publisher ST

WORD UP (NEOCEPT)

Word Up is Neocept's entry into the GDOS word processing market. Word Up is very similar to Microsoft Write, with one significant enhancement: the ability to im-

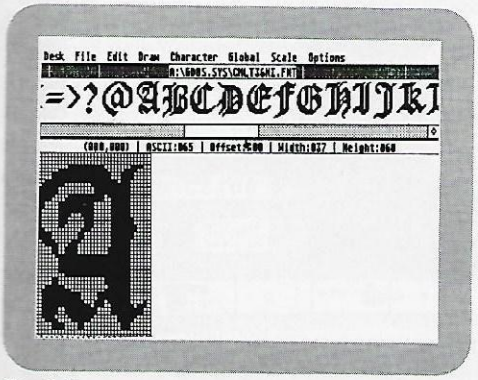
port and print graphic images. Word Up is truly a 'what you see is what you get' word processor (WYSIWYG). Multiple fonts, font styles, font sizes and graphics are all represented on-screen as closely to final output as possible. The program was written entirely in 68000 assembly language on a Mega 4; the manual was printed on an Atari SLM804 laser printer. $109.95 Cdn., $79.95 U.S.



Word Up

FONTZ! (NEOCEPT)

Fontz! is Neocept's new font creation/conversion utility for use with GDOS programs. Fonts can be created and edited for any GDOS device. Special Editing features include shift, rotate, flip, invert, clear, fill and add/delete rows or columns. Fontz! also allows the conversion of fonts from other formats to GDOS format. Fonts from the Macintosh, Amiga, DEGAS and Hippo-word can be converted into a useable format. Fontz! is an excellent utility, however, creating and converting fonts is a lot of work. Considerable amounts of time must be spent before achieving a final product. $49.95 Cdn., $39.95 U.S.



Fontz!

HUNT FOR RED OCTOBER (DATASOFT)

The first of Tom Clancy's books on modern combat will be appearing on an ST near you. Become Captain Marko Ramius of the Red October, a state-of-the-art missile submarine of the Soviet Northern Fleet, as you attempt to make a dash for freedom. Evade pursuing Soviet forces as you seek the safety of an American harbour. Red October is an all-GEM based game in which you use the mouse to set speed, course, depth and passive or active sonar, using an actual contour map. A combination adventure/strategy game. $49.95 Cdn., 39.95 U.S.

Hunt For Red October

CHOPPER-X (MASTERTRONIC)

Chopper-X has your basic "shoot-'til-you-die" scenario as you attack enemy defenses with your assault helicopter. Viper air- to-ground missles aid you against the armoured installations in the enemy camp. Rare cluster bombs may be picked up in your journey and pose a greater threat to your opposition. Mastertronics products generally offer good value; Chopper-X is not a disappointment, if you like joystick-breaking action. $29.95 Cdn., $19.95 U.S.

WARGAME CONSTRUCTION SET (SSI)

SSI's first non-fantasy conversion for the ST is here. Like the eight-bit version, this is an introductory-level game, with a few improvements, better graphics, a zoom option that serves no real purpose, and a few extra unit icons. The edit function works better, as it uses the mouse, and allows you to design a map with a variety of terrain types and units. Playing a game is as simple as moving the mouse and clicking. Despite a minimum of 512K to utilize, instead of 48K on the eight-bit, this game fails to use the extra memory for any real improvements. Beginners will enjoy this game, while experienced wargamers will prefer Universal Military Simulator. $49.95 Cdn., $39.95 U.S.

Wargame Construction Set

STRIP POKER DATA DISKS (ARTWORX)

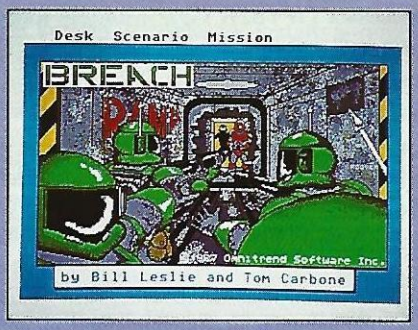
#4 - Dawn and Crystal

#5 - Cynthia and Janice

Artworx has released two more data disks for their Strip Poker game. Each has been done by a different artist, so the pictures have a new and different look. These opponents have their own "personalities" and style of play, giving more variety from the initial program's opponents. The Strip Poker program disk is required in order to use the data disks. I assume the original version sells well; why else would five data disks be released? $29.95 Cdn., $19.95 U.S.

Strip Poker Data Disk #5

BREACH



Dave Dempster

TITLE: Breach
TYPE: Graphics Tactical Combat Game
PRICE: $54.95 Cdn $39.95 US
SPEC. REQT'S: Colour
FROM: Omnitrend Software

The magazine ad for this game shows an armoured man carrying what looks a lot like a .50 calibre machine gun under his arm, racing out of the centre of an explosion! This is Breach, a new game from Omnitrend. It is designed to run on either a 520 or 1040 ST computer, in colour. Pleasant surprise #1: the game is not protected, and it's authors' first instructions to you are to back up your disks. This is a one player game, just you against the computer. It is also a squad-level, sci-fi war game, wherein you manoeuvre a squad made up of five types of marines with varying capabilities, through multiple types (33) of terrain, both outside and inside of towns and buildings. There are five levels, each consisting of a rectangle of 45x45 squares. Each scenario has specific victory conditions, such as rescuing civilians, and/or killing a specific number of opponents, or transiting (moving) from one area to another. You face six types of enemy, from beasts to enemy marines (and their leaders, the Overlords, looking like little Darth Vaders). The enemy are pretty formidable, so you'd best keep your act together.

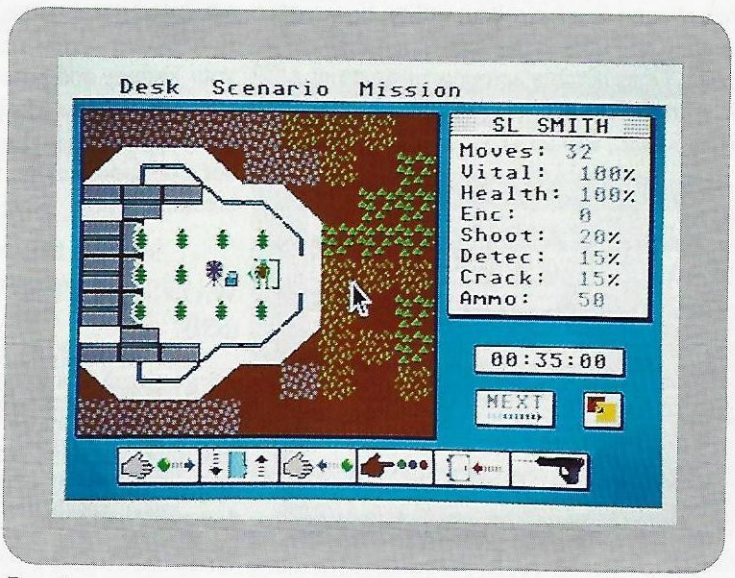
> The enemy are pretty formidable, so you'd best keep your act together.

The Manual

The manual: well, the drawings are kind of neat, and the use of headers to indicate page content is a good idea, but the content itself is poor. Information is hard to find and in general is very incomplete. In fact, to find out what all those cute objects are on the screen, you must invoke the Scenario Creator and go through the menus. I read the book, pumped up the game...and had no idea what I was looking at. There are a number of interesting charts which are neatly summarized on the back of the last page. The charts are not vital, but are useful.

Graphics

Game graphics are both very good, and marginal. What I mean is that, on the normal playfield, the graphics are super. Your little marines cautiously advance one step at time, blasters blast, even the beasts mouths move when they attack--and use of colour is super. The wide variety of objects, (once you figure out what they are), are easily distinguishable from each other. When you fire your blaster, you see the blast, and even the impact of the hit. When you shift to wide view, however, the graphics are terrible: worse than my old C64. This is more serious than you would think because the basic playing field is very limited: only 9x9 squares. The wide view, where you ought to be able to do your planning, is 21x21 squares of the 45x45 total at that level. Note also, that the game environment is in squares, and not the more useful, and traditional, hexes.



Breach

Game Description

The object of the game is two-fold: first, to win the scenario as per the victory conditions for that scenario. The second, and long-range, goal is to develop your Squad Leader into a tougher, more effective leader, through scenario victories. If he dies, the computer deletes him and you're back to square one. Each scenario has an entry- and exit-square, and at the entrance lies whatever goodies you start with, such as grenades, rockets, medical kits, extra ammo, etcetera. You may capture other goodies in other areas of the scenario.

Each marine has a set of characteristics: movement points (the display shows number of moves left this turn), vitality, shooting accuracy, weight being carried, ammo left, and ability to use specialty snoop devices. (These devices give you the practically useless wide view mentioned earlier.) I do like the way activity is handled. A marine uses Movement (activity) points for everything he does, whether it be to go forward, turn, fire his blaster, open a door, or operate a device. You cycle through each marine in turn, and give him orders until you use up all his available points, or can't think of anything else for him to do. The computer then moves. Boy, does it move! Instantaneously! When you're moving, the game is pretty sedate; when the computer moves you can tell where the illustrator got the title page idea.

Game Play

Game play is delightfully simple, and entirely mouse-driven. You start out with your Squad Leader selected, his characteristics displayed beside the play-field. You move him by clicking the mouse either north, south, east, or west of him; he will step off the distance toward the goal you've set. By the way, you'd best move him off the entrance square, or the others can't enter. There are icons to Pick up, Drop, Use (from grenade to medical kit) and Fire (which fires his blaster in the direction he's facing).

Game play is delightfully simple, and entirely mouse-driven.

A major constraint is the extremely limited visibility afforded you. You are basically playing on a 9x9 grid. The marine you are manipulating is always kept in the centre of the grid, thus your effective visibility and weapon range is five squares. Considering that you may move as many as 20 squares in one turn, you are in for continual surprises. Combat is fast and deadly. Its hard to develop tactics when you're not aware of where your other marines are, unless you play along on paper, something I have refused to do, since I've got a computer. The result is that game play moves slowly and cautiously, and you may cycle through your squad three or four times in each turn (each turn supposedly representing 30 seconds of real time).

Interestingly, you can see everything within the 9x9 square area that a marine is situated. Beasts deep within dense vegetation are as visible as on a parade square. You can even see through walls and closed doors.

You can only move or shoot in the direction you are facing, and you can only face north, south, east, or west. Even rocket launchers and grenades only function in a straight line in the cardinal directions. In a sense, it's almost like playing a chess game with rooks, both frustrating and unrealistic. Further, each shot ends in

Beasts deep within dense vegetation are as visible as on a parade square.

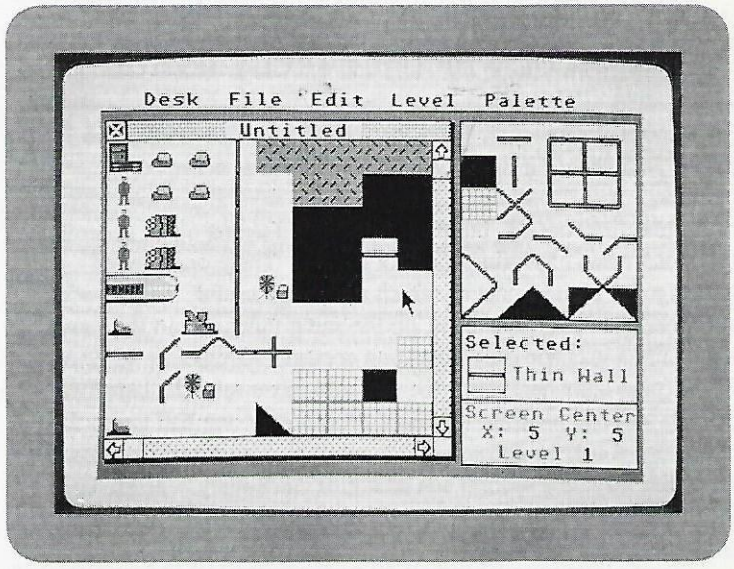
the first square on which an enemy or friend is situated. The shot may hit or miss, but it does not continue on. Remember the old joke about the circular firing squad--they'd have no trouble in Breach. More seriously, you cannot support one marine with another unless the second is also within five squares of the enemy: weapons are only effective inside the 9x9 grid.

Scenario Builder

Breach provides you with a scenario development kit. It's very capable, and virtually the only way you can learn what all the little symbols mean without having to bumble through a number of games. It's menu and mouse-driven, and worked like a charm for

I very much like the approach that allows me to construct my own variations or alternatives.

me. The first thing I did was to develop a little training scenario so I could learn how to use my men and equipment. I very much like the ap- proach that allows me to construct my own variations or alternatives: it's a super idea, and I commend the authors for it.

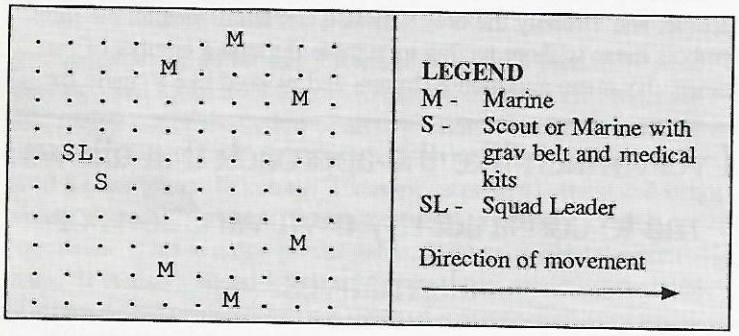


Scenario Builder

One thing: when I invoked the "wide view" in the builder, invariably my computer locked up. (Ed. note: Omnitrend assures us that this is not a bug in the program itself, and that they have not received any similar complaints.)

Tactics

Always save your Squad Leader: the game wipes out the file if he is killed in a scenario, or if you quit in the middle of one. Move one marine at a time, three or four steps; then, look about, move to the next marine, and re- cycle, until all moves are used up. I think that the authors recognize that the game is slow, in that they specifically warn against too many marines in a scenario. I found that about six to eight wasn't too bad. The very short range of the weapons drives you to want to group your men pretty closely for support; the area weapons such as grenades, however, require you to spread the men out. I don't con- sider myself any sort of expert, but the following is a for- mation I worked out that has given me some success to date when generally marauding, and looking for objects:



I basically use groups of two or three together. Scouts, rather than operating ahead, are held behind, because their light armour makes them unlikely to survive ambush.

There are a lot of objects to be found, most of which are pretty useful

Their speed, on the other hand, permits them to advance more quickly, either into a fight, or with first aid to a wounded marauder. Inside buildings, I usually keep several marines together for mutual fire support, but can and do send teams off in several directions when exploring--but not too far. There are a lot of objects to be found, most of which are pretty useful; the grenade and rocket launcher, however, do the same thing within the same range, and a grenade only costs one encumbrance point, while a rocket (plus launcher) costs 10. I would never take the launcher: a grenade and one hit from a blaster gets most of the bad guys. Just make sure you keep enough movement points to move one attacker out of the way so a second can attack, if necessary. Those are about all the hints that I can pass on to you; it's kind of catch-as-catch-can.

What I Liked...

The sounds are effective, graphics are super, the game makes exceptional use of colour, and a lot of the cutesey stuff--like beasts biting, little rockets flying, and grenades exploding--is very well done. The scenario builder is a great idea. The game is easy to play, exciting, and good fun.

What I Didn't Like...

The game system can be frustrating. Why can't two marines, standing beside each other, shoot at the same target? The short range of the weapons would be acceptable if you could see at least where you'd been, or even where all your people were. And, you shouldn't be able to see through walls and doors, and into deep jungle. The "whole view" is terrible, and virtually unusable as far as I am concerned. The game can get dull, particularly if you have more than about nine marines: it's difficult to coordinate more than a threesome.

The manual is usable, but not great: a good deal has been left out. I was intrigued (but not pleasantly) by the inside advertising wanting me to buy a magazine subscription, with virtually no information to indicate what my dollars would get me.

And...

As a wargamer, this game doesn't make it, and from that perspective I don't recommend it. The system, with great execution, fails in concept. I believe that the authors need to create a larger basic playfield; if not that, then at least weapons ought to fire in an arc in the direction the marine is facing, not just through the cardinal points of the compass. This is a cute game, is a lot of fun, and is infinitely (well, almost...) variable. Taking Breach as an adventure game, you may enjoy countless hours of pleasure. The game is a winner in graphics. The game-play system, using primarily the mouse, works well and easily, and the only bug I found was the lock-up in the scenario builder when "wide view" was selected. ■

David Dempster is with the Canadian Armed Forces. A long-term involvement in board-gaming and war-gaming naturally led to an interest in war games for the ST.

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Stephen Couchman

The GEM Menu Manager

In our continuing series on GEM and C Programming I plan to cover most of the major features of GEM that are available to an application. This month's column will concentrate on the GEM Menu Manager and the specific "Object" data structure associated with menus. I will explain how a simple menu structure is defined, which is useful if you do not have a resource construction set, or if you want to do special things with a menu, such as to disable, add or change drop-down menu items dynamically (while the program is running).

Jumping In With Both Feet

I believe that, quite often, the best way to approach a new subject is to look at a real-life example and figure out how it works--with the help of some good documentation. To that end, I have reproduced the minimum amount of code necessary for the data structures that make up a menu and placed them in Listing #1. This simple example creates just the "Desk" and "File" menu items, with space for desk accessory titles in the "Desk" menu, and a "Quit" option in the "File" menu. Do not allow the seemingly obscure declarations to scare you off -- this is not as complicated as it may seem at first, so allow me to describe them. The "OBJECT" data structures in GEM use a "linked list" approach to define the hierarchical relationship between items on the screen; that is, the onscreen position of a 'child' object is defined relative to the "parent" object which fully contains it. Take as an example the menu bar on a typical GEM application. The area on the screen (the menu bar) which contains the menu titles ("File", "Edit", etc.) can be thought of as the parent, which has the titles as its children. Similarly, when a menu drop-down is shown, the box is the parent and the menu items its children.

GEM Menu Data Structures

A GEM menu data structure definition is actually made up of two "independent" parent-child relationships; these are the menu bar with the menu titles, and the invisible box which contains each of the drop-downs. This last group can be further broken down into individual parent-child groups for each of the drop-downs. A careful consideration of the declarations presented in Listing #1 will bring to light the way that GEM determines which menu drop-down to display when the mouse enters the menu bar, and which item it selected when the mouse is clicked on a menu item.

The first item in the "menu_object" structure is the invisible box which contains the menu bar and its titles. (The definition of the "OBJECT" structure is included in the listing for completeness, but this definition appears in the "OBDEFS.H" include file which comes with your C compiler.) Objects are reconnected in a linked list by means of the first element of the "OBJECT" data structure. If the menu item has any siblings (two menu items in the same drop-down are considered to be siblings), then this first element will contain the index to that sibling. The first item does not have siblings (it cannot, simply because it is the first item in the definition), so this element is assigned a "NIL" index. (The "NIL" index, -1 or 0xFFFF, assumes that no more than 65534 (0xFFFE) items can appear in one "OBJECT" definition--a reasonable assumption, I would think!)

The next two data elements contain the indices of the first and last children contained by this parent. (We will see soon that this will encompass the menu bar and all of the menu titles.) This method is used so that the menu bar can be drawn by specifying just this one element. The draw routines would be requested to draw this element (which is actually invisible) and all other objects that are contained within it. Since the items are linked together, they can be found quite easily. The next elements tells us that this first menu structure item is a "G_IBOX" (invisible box), with no flags set (only the "LASTOB" flag is used in menu data structures, to indicate when the last menu structure item has been encountered), and that it is drawn in a "NORMAL" mode. The "ob_spec" element is not used in "G_IBOX OBJECT" types, so a "NULL" value (0x0L) is placed here. The final four elements give the position of this object, relative to the screen, and its width and height. The width and height are given in character widths and heights, rather than pixels, so that the values can be translated into actual pixel values when the program determines which screen resolution it is running on.

The second item in the structure is just the white box that makes up the menu bar. It is defined as a "G_BOX" (graphic box) drawn in "NORMAL" mode (not "SELECTED", "CHECKED", or any other of the "OBJECT" states). For this object type ("G_BOX"), the "ob_spec" element defines the colour to be used for the box, in the low word of this long integer value. The thickness, in pixels, of the border surrounding the box is contained in the low byte of the high word. For this element, the colour is white, with no border thickness. The box is positioned at (0,0) relative to its parent (the invisible box),

which is also at (0,0), so it appears at the top left hand corner of the screen. It is 80 character widths wide, so it covers the entire screen--assuming the "standard" 80 character-width screen. The box height is defined in a manner unique to "G_BOXes" in menu bars; that is, the height is defined as one character height plus two pixels. This can be decoded from the value, which is given in hexadecimal for clarity. The character heights appear in the low byte of the integer and the pixels in the high byte. The box is defined in this manner so that the menu titles, which are, of course, written in characters, will have one pixel of white beneath the letters with descenders; ie. "g's".

The third item in the menu structure is another invisible box, but in this case, it is the "hot" area of the menu bar: the area that is used to determine if the mouse has entered or left the menu bar. It contains the menu bar titles--the next group of menu items (items indexed by the "ob_first" and "ob_last" elements) in the structure. This item is drawn in the same manner as the first element, except that its position and size are defined differently. This box is defined to be positioned two characters to the right of its parent with a width equal to the end of the last menu title on the menu bar. The height is defined in manner similar to the second item, but in this case the height is 1 character height plus 3 pixels. This larger size is used to cause the mouse detection mechanism to be enacted just prior to the mouse coming in contact with the menu titles (for the illusion of greater speed one would suspect).

The next two menu items are the actual "G_TITLE" (graphic title) "OBJECT" types used to draw the menu titles. The only thing different about these items is in how the "ob_spec" element is used. At program run time, when the resource is loaded into memory, using the "rsrc_load()" function, these values are replaced by the address of the "menu_string" text strings at the given index. For example: the first item is replaced with the address of "menu_string[0L]"; the next with "menu_string[1L]"; etc.

The last "G_IBOX" (invisible box) is found in the next menu item. This box covers the area from just below the active menu bar area, to the point where the longest menu drop-down could reach (19 lines from the bottom of the menu). Its children are all of the drop-downs that exist in the menu.

The last group of menu structure items are each of the menu drop-downs ("G_BOXes"), with the menu items, "G_STRINGs" (graphic strings), that are found in those drop-downs. The "G_BOXes" are drawn in the same manner as the menu bar, except that the boxes are drawn with a border that extends one pixel outward from the boxes' edge (note that the low byte of the high word of the "ob_spec" element is 0xFF, or (-1); hence the one-pixel border). The menu items are defined and drawn in a manner similar to the "G_TITLE" items in the menu bar.

As Clear as Mud, Right?!

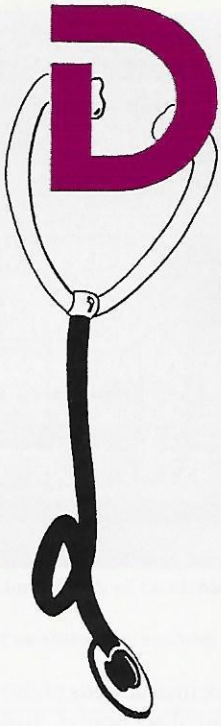
I am sure that this explanation of the menu data structures has raised as many questions as it has answered. I would be pleased to answer any questions about the areas that I have covered so far, or any other areas that are of interest to you. ■

Listing #1

```
/* Definition of OBJECT type; used in menus, dialog boxes, etc. */
typedef struct object
{
int ob_next; /* -> object's next sibling */
int ob_head; /* -> head of obj's children */
int ob_tail; /* -> tail of obj's children */
unsigned int ob_type; /* type of obj- BOX, CHAR,...*/
unsigned int ob_flags; /* flags */
unsigned int ob_state; /* state- SELECTED, OPEN, ...*/
char *ob_spec; /* ''out''- -> anything else */
int ob_x; /* upper left corner of obj */
int ob_y; /* upper left corner of obj */
int ob_width; /* width of obj */
int ob_height; /* height of obj */
} OBJECT;
/* menu text string definitions */
char *menu_strings[] =
{
'' Desk '',
'' File '',
'' Your message here '',
''----------------------'',
''1'',
''2'',
''3'',
''4'',
''5'',
''6'',
'' Quit ''
};
/* menu object definitions */
OBJECT menu_object[] = {
/* An invisible box that contains the menu bar and titles */
-1, 1, 5, G_IBOX, NONE, NORMAL, 0x0L, 0,0, 80,25,
/* The box which draws the menu bar */
5, 2, 2, G_BOX, NONE, NORMAL, 0x1100L, 0,0, 80,0x0201,
/* The active area of the menu bar */
1, 3, 4, G_IBOX, NONE, NORMAL, 0x0L, 2,0, 12,0x0301,
/* The menu bar titles */
4, -1, -1, G_TITLE, NONE, NORMAL, 0x0L, 0,0, 6,0x0301,
2, -1, -1, G_TITLE, NONE, NORMAL, 0x1L, 6,0, 6,0x0301,
/* Invisible box containing all drop-down menus below the menu
bar */
0, 6, 15, G_IBOX, NONE, NORMAL, 0x0L, 0,0x0301, 80,19,
/* Menu drop-down box for the 'Desk' menu title */
15, 7, 14, G_BOX, NONE, NORMAL, 0xFF1100L, 2,0, 20,8,
/* 'Desk' menu selections */
8, -1, -1, G_STRING, NONE, NORMAL, 0x2L, 0,0, 20,1,
9, -1, -1, G_STRING, NONE, DISABLED, 0x3L, 0,1, 20,1,
10, -1, -1, G_STRING, NONE, NORMAL, 0x4L, 0,2, 20,1,
11, -1, -1, G_STRING, NONE, NORMAL, 0x5L, 0,3, 20,1,
12, -1, -1, G_STRING, NONE, NORMAL, 0x6L, 0,4, 20,1,
13, -1, -1, G_STRING, NONE, NORMAL, 0x7L, 0,5, 20,1,
14, -1, -1, G_STRING, NONE, NORMAL, 0x8L, 0,6, 20,1,
6, -1, -1, G_STRING, NONE, NORMAL, 0x9L, 0,7, 20,1,
/* Menu drop-down box for the 'File' menu title */
5, 16, 16, G_BOX, NONE, NORMAL, 0xFF1100L, 8,0, 13,1,
/* 'File' menu selection -- 'Quit' */
15, -1, -1, G_STRING, LASTOB, NORMAL, 0xAL, 0,0, 13,1
};
```

Stephen Couchman is a software engineer, author of I*S Talk, and co-author of The Isgur Portfolio program. Stephen is interested in writing about specific aspects of GEM and "C" that will be of interest to those of you who are writing applications that use GEM extensively.

Doctor's Orders



Joe Kuffner

TITLE: Word For Word
TYPE: Parlour Game
SPEC. REQ'TS: 512K colour or monochrome
PRICE: $39.95 Cdn. $29.95 U.S.
FROM: Bay View Software
Suite A 295
177 Webster St.
Monterey, CA 93990

TITLE: Scrabble
TYPE: Parlour Game
SPEC. REQ'TS: 512K Colour
PRICE: $39.95 Cdn. $29.95 U.S.
FROM: Leisure Genius/Electronic Arts
2755 Campus Drive
San Mateo, Ca 94403

Working with computers can be frustrating, to say the least. Computers--especially the ST--are excellent at performing repetitive and sophisticated number-crunching tasks and storing large amounts of information. Is there any way to harness this power for recreational purposes? Yes! --and few games benefit more from the power of the computer than the popular crossword game, "Scrabble".

Excellent computer versions of Scrabble-like games are available for the ST. The two programs that I'll look at are Word for Word, from Bay View Software, and the Computer Edition of Scrabble Brand Crossword Game, from Leisure Genius and distributed by Electronic Arts. Both have plenty to offer.

Word For Word (WFW)

WFW is an interactive Scrabble-like board game released in 1986. It provides the opportunity to play Scrabble or countless variations of this theme against up to three computer and/or human opponents. It's interesting to note that the documentation makes no reference to its resemblance to the popular board game. It's far from being a genius player, but you'd better have a comprehensive dictionary around in order to stay in the game.

The documentation steps you through the basic rules of "crossword games" in a clear, concise fashion. Also provided in the manual are instructions on how to use the features of WFW while playing, and on how to design your own playing boards.

It took me less than five minutes to design the Scrabble board and features using, the WFW_MAKE program. I first selected a grid size of 15 by 15, labelled the appropriate bonus squares--literally, set up the letter values and distribution of the tiles, and finally set the number of tiles per rack to seven and scored the "use 7 tiles" bonus to 50. Completed--no fuss, no muss. That's what I call user-friendly programming, and Bay View Software are to be applauded for their efforts.

Now, on to the actual playing of the game. When playing, the monitor screen (either colour or monochrome) is set to black/gray/white (very appealing), with excellent character resolution. The letters are shown, along with letter values (if desired) and the playing board. The screen is divided into the playing surface and the working area (for the tile rack and prompts). In the tile rack, you may manipulate your letters with the mouse or simply shuffle them randomly (supposedly to give you fresh word ideas). All functions are available from both mouse and keyboard. You select your word by typing it, then placing it into the playing area. There, it will be accepted and scored or challenged by your opponents. As if all this care-free playing isn't enough, you have the option of being "assisted" and having the computer play for you! In moderation, this makes the game very educational. You can choose your best word and then compare it to the computer-selected word. I must admit that I've been stumped by my letters on occasion, only to have the computer offer some very good alternatives.

WFW has three skill levels to choose from, each progressively more complex in strategy (by looking for more complex word patterns). I generally enjoyed playing at the advanced level, as it was the most educational and entertaining. However, the basic underlying strategy of the computer, no matter which level, is to place the highest point-valued word onto the board, without regard for opening/closing positions or for saving desireable letter combinations for future use (i.e "ing"). This is a simple but ineffective strategy against experienced players.

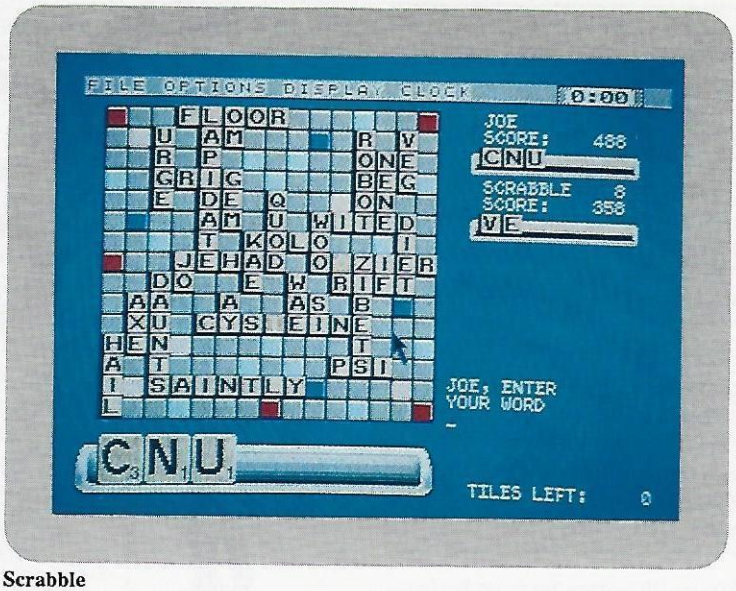
Per-turn time limits may be imposed on the computer; human players are allowed unlimited time. The computer seldom takes more than a couple of minutes for its selection, so I rarely use this feature.

There are a few other weaknesses within WFW which are difficult not to notice. The lack of a "save-game-in-process" feature is very frustrating, given how long a typical game lasts. Another weakness lies with the WFW dictionary itself (which is used for both selecting words and challenging them): it is not self-educating, nor is it modifiable. However, the WFW dictionary is extensive. The real problem lies in the fact that the computer imposes a penalty on itself if it incorrectly challenges a word that is not in this dictionary--a costly result. The word "OE", meaning a whirlwind off the Faeroe Islands, is an

example of such a challengeable word. Consider it your "ace-in-the-hole" for a rainy day, when you're losing to the computer opposition.

The last major difficulty with this program is the constant disk access, as the WFW dictionary resides on disk instead of in memory! I've found that the only acceptable way to play WFW is to load everything onto a RAM disk and play from there. This may prove to be a bit confusing for a novice player (the target market for this program, after all).

WFW is an acceptable, albeit beginner's level, version of a Scrabble-like game. The program has an excellent player interface but lacks the play quality and strategy that today's computer software consumer demands.



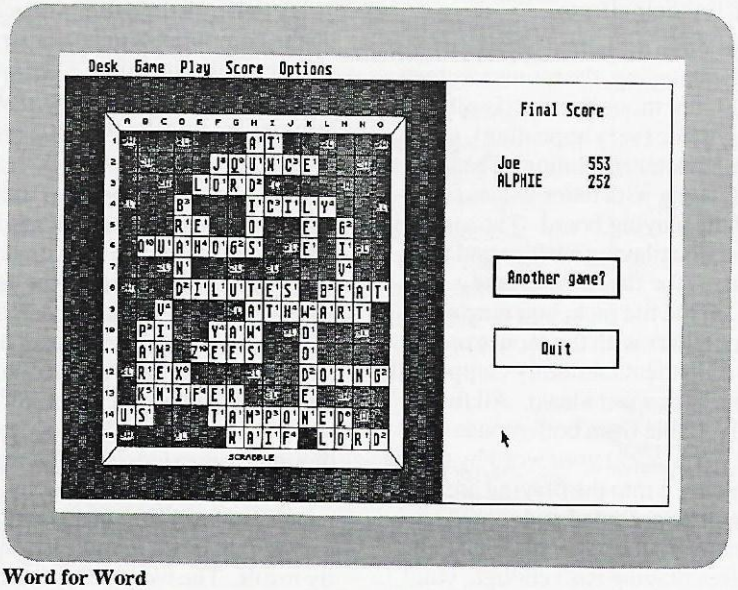
Scrabble

The Computer Edition of Scrabble Brand Crossword Game

In this version of Scrabble, officially licensed from Selchow & Righter, up to four human or computer players challenge their wits in a visually accurate rendition of what has been The word game of word games since 1948. The game was programmed in Europe for the ST and published by Leisure Genius; it runs on both monochrome and colour systems.

The concise documentation describes the basic object of the word game and explains the rules of Scrabble. (It reads like the inside box instructions of the real game--a good sign of accuracy). It also covers some of the changes to the board and the method of handling the letter "tiles". The changes are minor, and, surprisingly, the transition is quite intuitive.

The player interface involves a four-step process. After determining your play, you type the word, point to the starting square, specify "across" or "down", and then confirm that this is your desired play. This is quite intuitive; however, ST owners who have become used to GEM will certainly notice the deficiencies in this interface. It's obvious that the program is a conversion from another computer. The problems lie in having no default options (for "Y/N"-style responses), having to hit "Return" after typing your word, and not having GEM accessories available for use. However, after several games, the additional keystrokes and mouse-pointing become more routine. One feature that I miss in the conversion is the ability to manipulate the tiles on the rack. Only a random shuffle is available for the player. This makes systematic word-finding practically impossible.

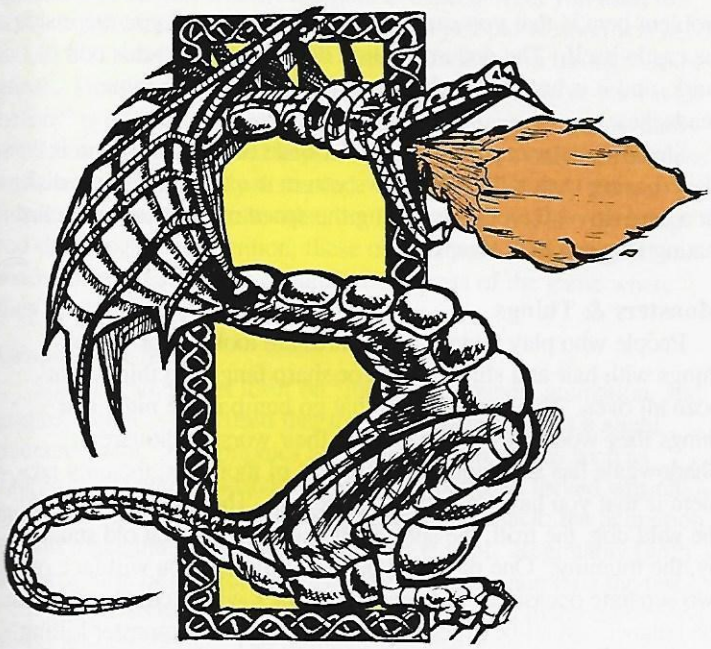


Word for Word

Eight levels of play are available, from beginner to advanced, for the computer player(s). These levels reflect several factors, including the number of words in its vocabulary, its skill in placing words on the board and its willingness to open up or close off the board. I found level eight challenging enough that it was necessary to research my words before playing (strictly forbidden in Scrabble circles) in order to successfully compete. It is also possible to have the computer offer a word for your turn; I've noticed, however, that it is rarely the best choice. On occasion, the computer will decline to offer you a word--an interesting touch.

I discovered that there are several relatively common words that are not in the

continued on page 54



SHADOWGATE

Robert Kelly

TITLE: Shadowgate
TYPE: Graphic Adventure
SPEC. REQ'TS: 512K Colour
PRICE: $49.95 U.S. $59.95 Cdn.
FROM: ICOM Simulations/Mindscape Inc.
3444 Dundee Rd.
Northbrook, IL
60062

I was browsing through my local computer store recently, when I noticed a game called Shadowgate . "Noticed" is putting it rather mildly; in fact, my eyes were assaulted by an arresting package of colours and designs that were, to say the least, very impressive. I had just completed Dungeon Master, and I figured I was probably wasting my money, since no other graphic adventure could possibly meet the standard it has set. In spite of this reasoning, I plunked down my $60 (CDN) and bought the game. (I have always been a sucker for flashy packaging!!). In fact, the packaging was only the beginning of a very interesting experience. Now my fellow adventurer, put down those heavy possessions, relax and follow me...

Shadowgate is the third in a series of games produced by the combined talents of Mindscape and ICOM Simulations, and it follows the release of Deja Vu and Uninvited. Like its predecessors, Shadowgate is innovative in design, in that it is almost entirely mouse controlled; there are very few occasions where keyboard entries are required--a real plus for those gamers who are "two-fingered" typists. The game features click-on commands, graphics and sound. To begin playing Shadowgate, you need to familiarize yourself with its commands; I spent a great deal of time at the beginning of the game just trying to light the torch, to avoid breaking my neck while I stumbled around in the dark. In most games, practice makes perfect; this game is no exception. The documentation is complete and very informative about most commands; however, a bit of assistance in lighting the first torch would have been appreciated.

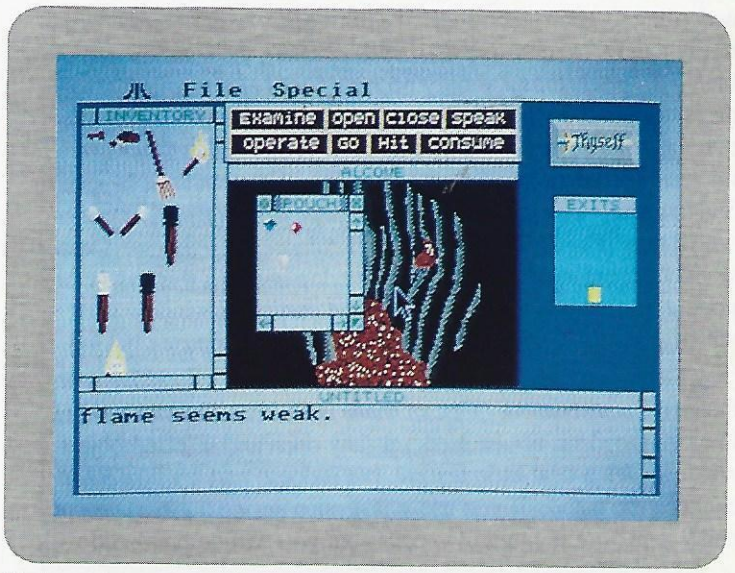
Packaging

This review would be remiss without some reference to the packaging; it is absolutely first rate and ranks with any design I have seen. The graphics on both covers are original, and, more importantly, they make the buyer feel that Shadowgate will be a classic game and well worth the money. The text design and descriptions are excellent; when I read them, I could almost hear the wind whistling through the castle; I couldn't wait to get the game home and start playing. Without question, packaging was the determining factor in my decision to buy the game. (If all ST games were packaged this way, I'd be bankrupt.)

The documentation provided with the game was very thorough. The pictures and descriptions were accurately depicted, and except for the problem with the torch-lighting, the documentation was complete--it even helped me get started.

Playability

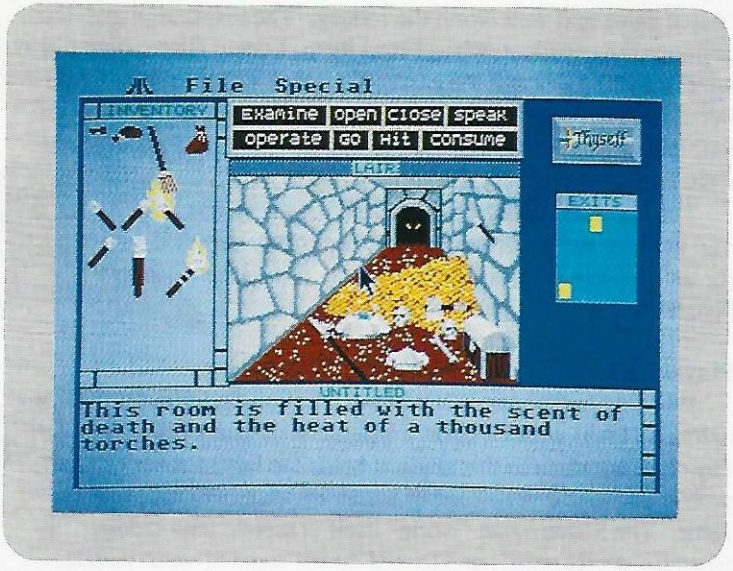
When a Shadowgate adventure starts, you find yourself standing before a closed wooden door; a baleful skull stares down at you. Pay close attention to this skull; it holds the key to some of your problems and is a very good indicator of what is to follow in the game. The Shadowgate "world" itself is replete with hidden passages, secret panels and locked doors; some of these passages will spell death for you.



Shadowgate

The commands themselves are self-explanatory; however, some commands provided are never used, and some can be avoided simply by double-clicking the mouse on the object of your attention or in your desired direction of travel. The same interface used in Deja Vu and Uninvited was used in Shadowgate--althout the three are entirely different games. It is probably the use of this common interface that resulted in the presence of these unused commands. I would prefer that the memory required for these unused commands be put to use by the game. You would be well advised to familiarize yourself quickly with "Operate"; it is the most important command in Shadowgate and will be used more than any other.

The on-screen windows are probably Shadowgate's most innovative feature; one window shows your current inventory; another provides text descriptions; and a third provides a graphic display. The inventory and text windows may be shrunk or enlarged,



Shadowgate

according to your preference. The inventory window was particularly handy, as, on more than one occasion, the solution to a problem was made easier simply because I was able to make a decision based on the information displayed in this window. It is not uncommon, in a text adventure, to forget certain details of your inventory--sometimes at a critical moment; this will not happen in Shadowgate. You will, however, acquire many objects, some of which may not be visible unless you enlarge the window. Occasionaly, an enlarged window will overlap another; this can be annoying, in that you must "activate" the particular window with which you wish to work--the result being extra mouse-clicking.

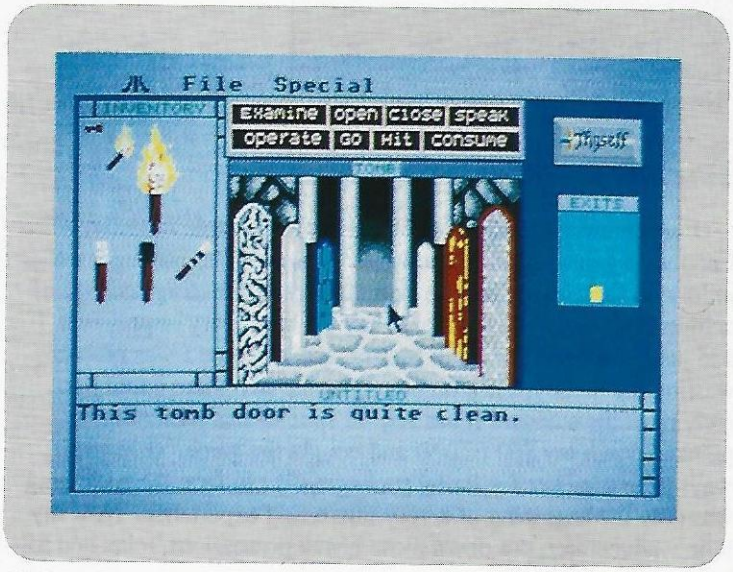
Shadowgate also provides drop down menus, consistent with the GEM environment. One of these is entitled "Special" and allows you to clean up--or mess up--any open and selected object window. It's a neat little feature, but it doesn't do a whole lot to enhance the game. If you use it just once during a game, you probably won't use it again. On occasion, you will be presented with the message: "Click to Continue"; this message is an absolute pain in the neck. It slows the game appreciably, and the designers would be well advised to remove this annoyance.

Saving and restoring games in Shadowgate is a snap; the only problem here is that you cannot restore a game until you are inside the castle itself. The documentation does not refer to this odd quirk, and it is hoped that this warning will save you some headaches.

Shadowgate is copy protected, but once booted, the game is played using Disk #2. This allows you to use the savedgame disk on a hard drive, thereby increasing the speed of the game and eliminating frequent disk swaps.

Monsters & Things

People who play fantasy adventures are looking for lots of things with hair and slime and razor-sharp fangs and things that ooze all over. They want things that go bump in the night and things they wouldn't want to meet in their worst nightmares. Shadowgate has an adequate assortment of monsters; the only problem is that you have seen them all before. There's the werewolf, the wild dog, the troll, the sphinx, the cyclops and that old standby, the mummy. One of them you can't kill; one you will face on two separate occasions; one you must attack with a couple of items; the balance can all be killed in the usual "good-ole monster killing" tradition. You will also find a "Wyvern" and a "Behemoth". Both of these monsters present interesting possibilities; however, both were easily disposed of and thus were major disappointments. The Ferryman was really neat: he only played a small role in the game, but he was one of my favourite characters. But, the best monster in the game is the Waif. Make sure you burn the corrrect torches, or you will be cursed forever!!



Shadowgate

Fantasy players like to find objects as well. These could be red-herrings or fundamental to the game. Who cares?! What is important is actually finding the items, along with the unbridled anticipation that the just-discovered item is exactly what you need to solve a particularly annoying puzzle or is just the weapon you need to kill that rotten monster who's been hounding you throughout the game. Here again Shadowgate suffers from the "you've-seen-it-all-before" syndrome. There is the usual assortment of swords, hammers, torches, shields and keys; many items have only one purpose and can be immediately discarded. The overall variety did not impress me; however, the orbs, the Bladed Sun and the lightning rod deserve special mention; these objects were well designed and innovative and served to enhance those parts of the game where they were used.

Graphics & Sound

Shadowgate prides itself on "incredible sounds, animation, and graphic detail". I'm afraid that the term "incredible" is a slight overstatement. The graphics are on a par with games such as Transylvania and Mindshadow; what the program lacked was character animation. Monsters should move and attack; the animation should make the player feel that escape is vital. Regretably (with the exception of the troll and the waif), Shadowgate fails the test.

The sounds used in Shadowgate game were actually quite good, all things considered. The problem was that there simply weren't enough of them. Doors should have been made to creak; hidden panels should have made noise when opened; the wind whistling through the halls should have been heard--but that was not the case.

Puzzles & Problems

Here Shadowgate delivered. At least one puzzle was solved by pure luck; two other puzzles remained unsolved when the game was completed; obvious red-herrings. I did, however, spend a great deal of time trying to solve these problems; that's precisely what problems should do. Unsolved puzzles should leave the player with the continuous uneasy feeling that he has done all this work, only to be foiled in the end, because of some failure in another part of the game. Although most of the objects in Shadowgate were not new by design, their usage was innovative and applied differently to the various puzzles; this is a definite plus for the game. Improper use of the torches will prevent you from solving certain puzzles that are fundamental to the successful completion of the adventure. The broom presented a particular problem; try flying it in various places within the game's "world".

Game Conclusion

Personally, I think that the conclusion is absolutely essential to the overall success of any adventure game--be it graphic or text. The conclusion is the last thing you see and will greatly affect your overall impression if you have been playing the game for many, many hours. The conclusion in Shadowgate was as enjoyable as that of any graphic adventure that I can recall. The final battle scene was not up to par, but the player is rewarded and recognized for a job well done. The reward and recognition here is unique and certainly increased my appreciation for the game. Make sure that your printer is configured before starting Shadowgate; a certificate, hailing you as the King of the Lands, is printed out at the conclusion of the game. If your printer is not configured before you boot Shadowgate, this feature will not be available to you.

Overall

All game ratings are subjective, but they should recognize certain criteria: was there value for the money spent on the game? Did the game "handle" well? Did it do what it was supposed to do? Shadowgate needs some work in the areas of playability and graphic animation. I would normally rate this game at a level of about 6. I was, however, disappointed with its playability and animation. If Mindscape were to improve these areas (perhaps by discarding unneeded commands and providing more animation), my rating would be on the order of a 7. I enjoyed the conclusion, and for that reason alone I would increase the overall rating to a 7-1/2. With the exception of Dungeon Master, this game is probably as good as any graphic adventure currently on the market. I think most people would enjoy Shadowgate and would feel their money had been wisely spent.

Is it as good as Dungeon Master? No way. I told you I was a sucker for great packaging! ■

Robert Kelly is a Teamsters Union President who works, and plays, with computers of all types and sizes. His primary interest is adventure games--he started with Infocom games.

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MIDI Buzz: Music and MIDI on the ST

Bruno Degazio

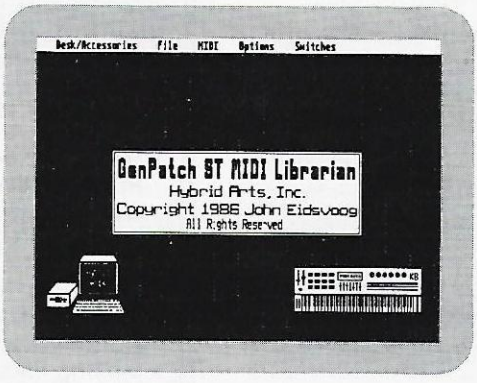
Synthesizer Librarians

What is a synthesiser librarian? Is it a bespectacled little old lady who packs away all the DX7's into your local music store's warehouse? Or is it the guy at the back counter who always seems to know where the correct manual is when you need it? Well, it's neither of these things--in fact, it's not even a person. It's another type of program that's available for the ST to assist in musical applications. Specifically, it's meant to allow you to store the parameters that constitute a syntheziser's sound.

Perhaps a little background is necessary here. All modern synthesizers are programmable devices. What this means is that the exact settings of all the knobs, switches, data sliders, and what-have-you on the front of the instrument are stored away into a small area of on-board memory inside the synthesizer. In fact, modern synthesiers are, in many respects, simply special-purpose computers, with a microprocessor (sometimes two or three), memory, and special purpose I/O devices (the keyboard--input, and custom high-quality sound chips--output). Unfortunately, the amount of on-board memory is usually severely limited--often in the range of only 2K to 3K. This, again, has to do with cost, marketing, and sometimes with the use of special processors that have very limited addressing capabilities.

Whatever the reasons, the fact is that most synthesizers have memory to store away only a few sets of parameters (called "patches", from the old days when parameters were actually set by wiring modules together with *patch cords*). Most synths nowadays have enough memory for at least thirty-two patches, but this turns out to be a very small number, once you get past your first song.

Enter the *synthesizer* (aka *patch*) librarian. This is a program that allows your ST to read the parameter settings via MIDI, and save them to named files on an ST disk. Naturally, the converse,



GenPatch ST MIDI Librarian

reading a disk file and sending the information to the synthesizer, is also true; otherwise, the program wouldn't be worth much.

While this in itself is a valuable (in some situations, indispensable) service, most programs allow you to do a great deal more. Any good librarian will allow you to arrange patches into *banks*, groups that somehow fit together logically and can be sent to the synth all at once. For example: you might want to group all the patches that you use in a particular song into one bank, and save that on disk with the name of the song for easy retrieval later. Or, you might find it more useful to group similar patches together--for example: all your string patches--so that when you need a particular type of sound, you can easily call up a large selection.

In addition, once the computer has the parameter data in memory, all sorts of wonderful things can be done with it. The first thing that comes to mind, of course, is to offer some means of altering the parameters--equivalent to adjusting the patch at the synthesizer. This is where the patch *librarian* becomes the patch *editor*. Most programs nowadays make full use of the ST's fine graphics capabilities to expand upon the simple editing features found on the synth's front panel. Graphic displays of many synth parameters, especially things like envelope shapes, which are inherently graphic, are very popular and make complex synth programming a great deal simpler. One last little twist on this theme that most programs offer these days is the ability to randomly generate sets of parameters. In some programs, such as the "DR. T" series, you can even specify which of the several dozen parameters that constitute a patch will be randomized, and which will remain unaltered, allowing you to *randomly generate* entire families of related sounds.

Hybrid Arts developed the granddaddy of synth librarians for the ST, and it was their original DX-DROID (since renamed to DX- ANDROID for copyright reasons--it seems that George Lucas, of "Star Wars" fame, has some previous right to the word) that set the pattern for all the programs that followed, especially the random patch-generation feature. Unfortunately, the program is looking a little long in the tooth these days,

and the one existing update did little to address its deficiencies. It is not GEM-based, and, far worse, it does not even employ standard ST disk files, instead taking over the whole disk, with its own directory structure. Ths implies several things, all of which are an extreme drag: 1) you can't find the patches you need from within some other program, because there isn't a readable disk directory. 2) if you happen to mix up a DX-DROID disk with a standard ST disk, the results can be anything from annoying disk errors to complete loss of the data and/or programs on the respective disks. To make this worse, DX-ANDROID doesn't check to see whether you might have changed disks--it just merrily trashes any unwary disk. I once lost an entire disk of patches, representing several months of work, just by swapping proper DX-ANDROID disks without first letting the computer know.

Dr. T probably has the most complete line of patch librarians available from any software company. At present they offer programs designed to work with the ubiquitous Yamaha DX7, the popular Yamaha TX81Z and FB01 rack-mount units, the Yamaha DX27 line of inexpensive synths, the Casio CZ series of synthesizers, and the new and popular Roland D-50. This line of software is entitled the Caged-Artist series, after programmer Robert Melvin (who presumably whiles away his programming hours behind bars) and deserves very high marks for versatility, ease of use, and price. They offer all the attractive features of librarian-editing programs described above, and most offer a few features that aren't found anywhere else, like click-and-point envelope editing. Their only drawback is that, like the DR. T KCS, they are not GEM-based.

BeamTeam also has a series of editor-librarians available for the ST. I haven't used these myself, but I've been informed by usually reliable sources that these are good plain-vanilla librarians that do the job without any particular problems but also without anything to really distinguish them. Good, I suppose, if you can get a good price, or if the DR. T stuff is unavailable.

Music Notation Software

Closely related to sequencers are music notation programs; in fact, as mentioned above, the STEINBERG PRO-24 even has a limited capability built-in. The far more common approach, though, is to offer a music notation program as an adjunct to a sequencer. This is partly a marketing decision (yet another program to buy), but it's also based on very practical considerations: notation programs tend to be very large and complex, and until the latest generation of micro-computers, with processor speeds and memory sizes at least an order of magnitude beyond the previous Apple II's and IBM PC's, combining these two functions into one program was virtually impossible.

At any rate, the current crop of notation programs for the ST includes several promising titles, but, unfortunately, none of them is a mature product yet. Contrast this to the situation on the Macintosh, where music software has gone through two or three generations at this point, and most of it is pretty thoroughly debugged and brimming with features.

The selection for the ST includes MasterScore, from Steinberg Research, designed to work with their PRO-24 sequencer; The Copyist from Dr. T, which can read files from the Dr. T KCS; and EZ-Score, an entry-level offering from Hybrid Arts that can read files from any of their line of ST seqeuncers. Although all are now available in Canada, none of these products is really beyond a test version yet, and I don't feel that I can honestly recommend any of them. I think that the ones to keep an eye on are going to be the Hybrid Arts and Steinberg systems, but at this date both are lacking features that are essential to any serious work, such as flexible score layout (EZ-TRACK is restricted to, at most, three staves) and large symbol libraries (Master-Score offers only a rudimentary selection of musical symbols). The Copyist, DR. T's notation program, while better in these respects, suffers from an *extremely* hard-to-use user interface (unlike the other two programs, it is not GEM based); the version 1.4 update did very little to address these problems, although the latest rumour is that version 1.5 will be a decided improvement. It does have the most complete symbol library of any ST notation program, and the dot-matrix output, while very slow (20-30 minutes per page) is formatted at quad-density and rivals laser printer output in appearance.

This concludes the introductory phase of this software survey for the ST. In the next issue, I'll look over the available offerings in the rather esoteric realms of software synthesis (the ability to design your own digital sounds from scratch) and algorithmic composition (and, yes--it's actually fun!). I'd also like to hear from you, Atari ST MIDI musicians, as to what interests you in the way of musical uses of the ST. Until then, happy MIDIing!■

Bruno Degazio is a composer whose works are performed globally, and an acknowledged expert in the area of computer music research and application techniques. To Bruno, the advent of MIDI meant that he could bring his love of musical exploration home with him.

Doctor's Orders continued from page 48

computer's 23,000-word list. A few examples include "petal", "hosen", "winces" and "quark". It occurred to me that the reason these are not in the dictionary is to save room for much more obscure words like "rotl", "aa", "frit" and even one that isn't in "The Official Scrabble Player's Dictionary", from Pocket Books--"adry". The way that the computer gets around the normal penalty for incorrectly challenging your words that are not in its "vocabulary" is that it does not impose the loss of turn penalty on itself (but does against players). It will simply ask for confirmation that the word really does exist. If you confirm, it will take your word for it (pun intended). Players are unable to challenge the computer's words.

Time limits are available, anywhere from "lightning" play, at 30 seconds per turn, to a more leisurely five minutes; the limits are imposed on all players. It is also possible to further limit a computer opponent's time by forcing it to play the word it is currently considering. I'm not sure what advantage this has, but it's fun to do it every now and then. I've noticed that the computer will frequently use as much time as it can at the highest skill level, so the timer also sets the pace for the game. I suspect, too, that the computer "thinks" while you play, judging by its speed of play after I've been deliberating. A nice programming touch, if it's true.

A great feature is the game "Save/Resume" feature. Try to do this with the board game! It makes the game much more relaxing when there is no reason to hurry. Thank you, Leisure Genius, for including this option.

The best part of computer Scrabble, though, is that it is a worthy and fun opponent. At level eight, it plays an extremely effective defensive game. Like most experienced players, it obviously considers a closed board to be a good board, because this requires a much stronger vocabulary of short and obscure words and more playing experience. I've also noticed that its strategy, when in a position to open the board, includes using words that are not easily expanded simply by adding one letter. As for its offensive skills, 23,000 words "at the tip of its tongue" is nothing to scoff at. Computer Scrabble brings the "thrill of victory" back to the game. No more easy marks or boring opponents. Computer Scrabble should prove to be a valuable tool for improving your game, and you'll still have plenty of fun.

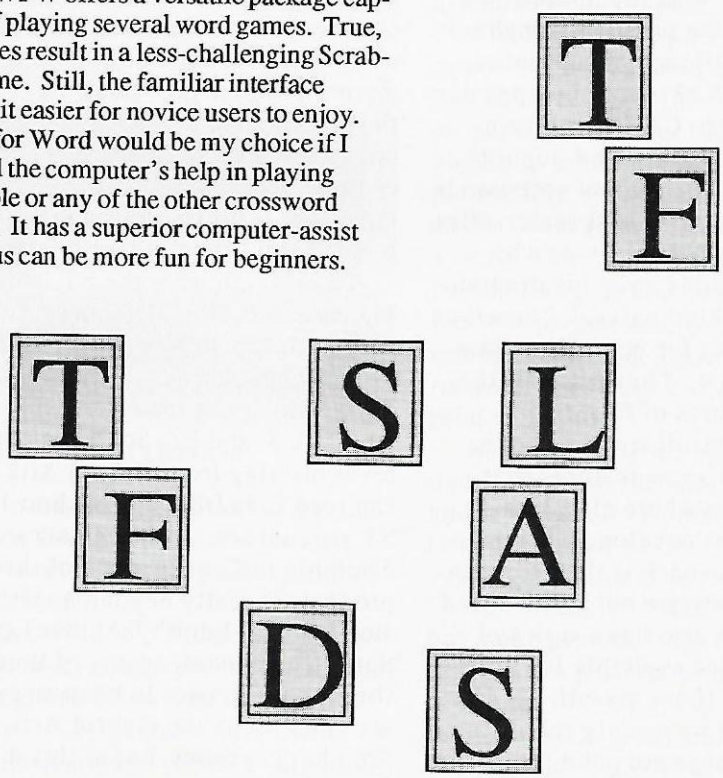
Moment of Truth

A tale of two programs. Each reflects a different opinion of what's important when converting a popular board game into an enjoyable computer parlour game. I considered charting a comparison of them in the same way one would compare two word processors, but I feel that this would unjustly shift emphasis from what's important: is the program worth your software dollars, and does it entertain you while maintaining a relaxing, healthy environment? The answer for both programs is: yes--but for different reasons.

WFW offers a versatile package capable of playing several word games. True, this does result in a less-challenging Scrabble game. Still, the familiar interface makes it easier for novice users to enjoy. Word for Word would be my choice if I needed the computer's help in playing Scrabble or any of the other crossword games. It has a superior computer-assist and thus can be more fun for beginners.

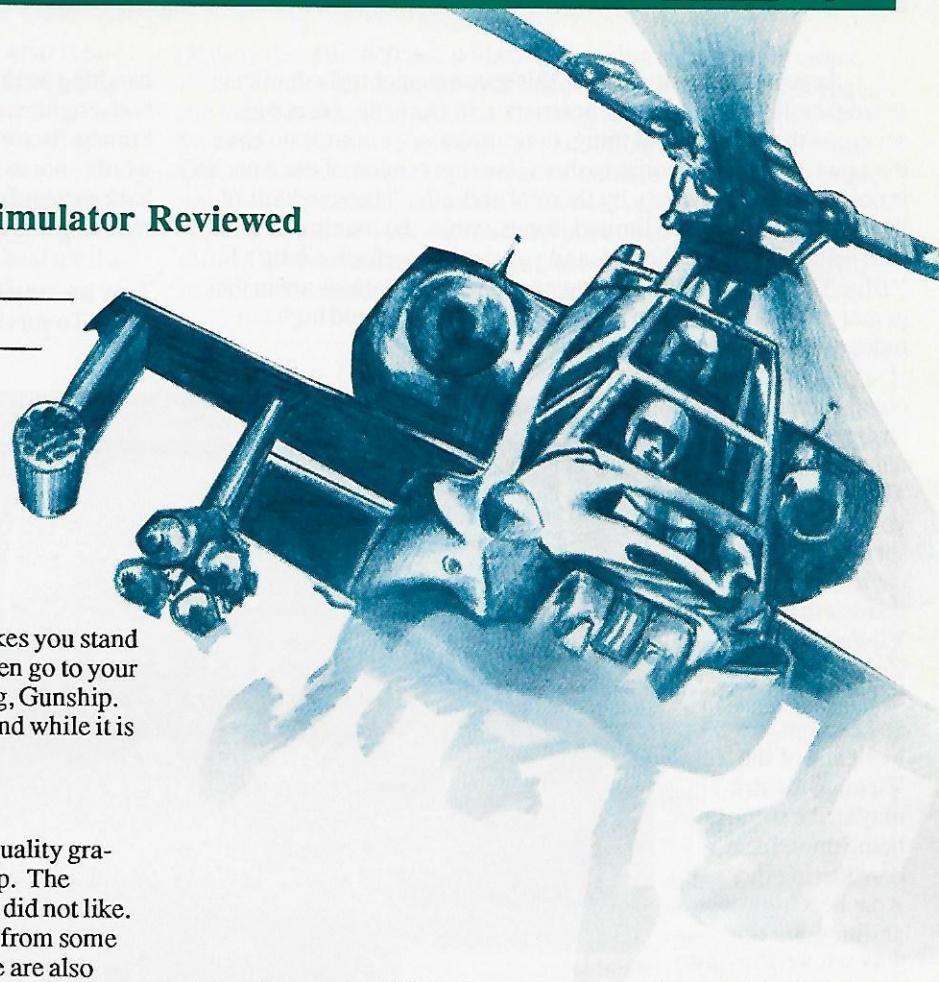
All in all, the computer edition of Scrabble Brand Crossword Game is my personal choice for word game pleasure. Its excellent playing skills and competitiveness earns both my dollars and my acclaim. Aside from a few irregularities in the interface, Scrabble plays like the real thing, except that you won't need to find opponents who play at your level. It will simulate both novice and experienced play, at your convenience, which makes it a winner with the whole family--maybe even with the family doctor. Be a winner and watch your stress levels; too much work will make you an unhappy and unhealthy person. A relaxing computer game may be just what the doctor ordered. Take care of yourself. ■

Joe Kuffner is a mechanical engineering graduate of Carleton University in Ottawa who now lives in Washington D.C. He is an active participant in several Washington area ST User Clubs, and specializes in word processing and parlour game software.



Gunship

MicroProse's Apache Helicopter Simulator Reviewed



Keith Burnage

TITLE: Gunship
TYPE: Action/simulation game
SPEC REQ'TS: 512K colour
PRICE: $59.95 Cdn. $49.95 U.S.
FROM: MicroProse Software Inc.
180 lakefront Drive
Hunt Valley, MD
21030

Have you ever come across something that makes you stand still in your tracks and say, "Wow!"? Well, if not, then go to your nearest ST dealer and buy Microprose's latest offering, Gunship. This is a simulation of the Apache attack helicopter, and while it is their third combat simulation, it is by far their best.

Graphically speaking...

One thing I look for is a company that realizes quality graphics enhance a product; such is the case with Gunship. The terrain graphics are realistic, with only a few aspects I did not like. The limited towns and lack of trees/forests took away from some of the realism--not to mention hiding places--but there are also realistic touches, like bursting flak, and detailed graphic displays of ground forces.

As with F-15 and Silent Service, Gunship uses a "roster" to make this more than another "flame-the-bad-guys" game. This twist is further enhanced by offering promotions and medals to the successful pilot. The ultimate chopper pilot should acquire the four campaign ribbons and the rank of Colonel. This reward aspect keeps you going back to improve your standing.

Of manuals, pirates and ram disks

As is to be expected, Microprose rewards its customers with the best documentation possible. In addition to explanations of all the functions, there are two tutorials that teach you the basics of flying and combat. There is also a section on aerodynamics which should be read. A weapons and tactics section will help you to know the limitations of your weapons and your enemies. If there is one thing, other than the quality of its products, for which Microprose is known, it is the quality of documentation. Other companies could learn a lesson by following Microprose's lead. The documentation is further enhanced by a keyboard overlay which eliminates the problem of having to memorize the various keyboard commands; this aid makes the game a snap to learn.

The manual doubles as a copy protection scheme. Before you can begin the game, you must pass a vehicle identification test, and, when carrying out a mission, you cannot land at a friendly base unless you know the correct countersign to the password given at a briefing. To further protect this game from pirates, the master disk is also copy protected--something I wish they did not do since, as a double-sided drive owner, I would like to have put the whole game onto one disk.

Luckily, you can load the game into a RAM disk. This allows you to keep your hotshot pilot alive, when he has been listed "KIA" or "MIA". Just delete the "ROSTER.FIL" from the RAM disk; then copy the permanent version from the master disk back to the RAM disk. Should your success on a mission cause your pilot to be decorated or promoted, delete your permanent copy of "ROSTER.FIL" and copy the RAM disk version to your master disk. Yes; I know this is cheating--but all's fair in love and war.

There have been problems with some master disks, and I have found that, when using the RAM disk option, the game, when checking my master disk for authenticity, treats it as if it were damaged. Microprose is working on both problems.

Mechanics, specs and hot spots of the Apache

The mechanics of Gunship make it easy to play. Before each mission, you decide what type of mission you will fly, your duty assignment, reality levels and enemy quality. These decisions affect the mission's risk level: the more hazardous, the greater the chance for promotions and decoration. What is not hazardous is flying the craft: you can use either a joystick, the mouse or the keyboard. My personal preference is the joystick, as it is more realistic, although I find it best to use the mouse for setting navigation points on the map.

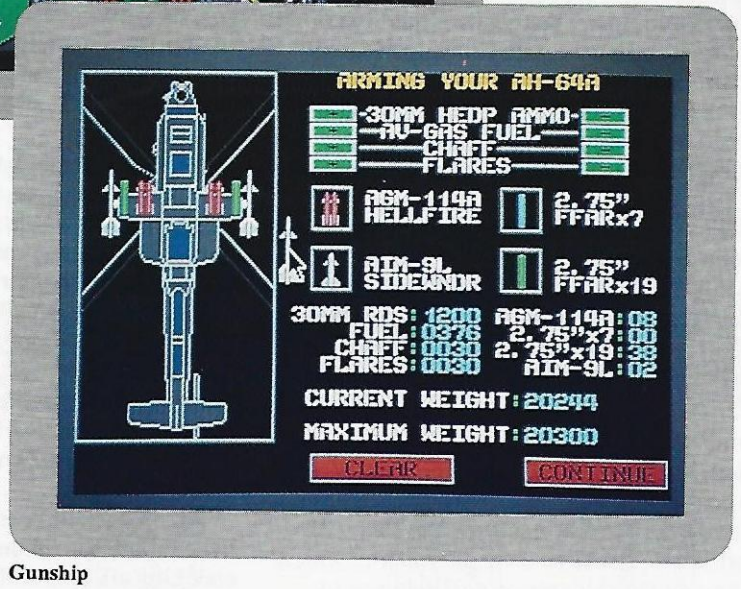
As with most simulations, this game cannot truly duplicate the real craft. The flight characteristics, in Gunship, are not as severe as those of the real thing: the simulations controls do have the same sluggish response to them, but this version of the Apache is not affected as severely by thermal updrafts. The standards of the craft have also been limited; for example, the maximum service ceiling has been limited, and you cannot perform a loop a la "Blue Thunder/Airwolf". However, these limitations are to the gamer's benefit, as a loop leaves you defenseless, and high altitudes are hazardous to an Apache's health.

As you change theatres, the hazards and dangers increase. This game requires you to earn the service ribbon for each of the four combat theatres: Vietnam '65; Central America '83; Middle East; and Europe. The inclusion of the '65 Vietnam theatre may strike some as being unrealistic, considering the Apache's high-tech abilities, but this was where the "gunship was born. Microprose would have been remiss not to include it.

Gunship

"Reality ... what a concept"

Despite this historical liberty, the key word to describe Gunship is "realism". This simulation gives us a sense of what it is like to be a gunship pilot. For one thing, weather conditions affect the maximum weight capacity. So, you have to balance the types of weapons you will carry, to face a particular target, with those the weather will allow you to carry. Several times, I have cursed myself for not loading enough Hellfires or shortchanging my Chain Gun ammunition.



Gunship

In flight, besides paying attention to altitude, ground speed, etc., you have a couple of new toys to vie for your attention. The vertical speed indicator shows whether you are flying level, climbing or diving. The hardest new control to get used to is the "collective", which changes the rotors' angle of attack, causing the craft to stay level, rise or descend. One thing to remember, when using this control, is that you do not get an instant response; so, do not press this control continually, if nothing happens right away.

The greatest sense of realism this simulation gives you is in handling a crippled craft. Should your main or tail rotors, or one or both engines, go out, it will seem that you're riding a bucking bronco. Believe me, you will sweat buckets and use a few choice words--not to mention some body english--when trying to land. I have never played a game that offered me a taste of the terror of realizing that my number could well be up.

Tips on staying alive and getting ahead

To survive, practice autorotation in the safety of the training ground. This procedure will let you land the craft safely, rather than crash it, and hopefully you will be close enough to friendly lines to survive for another day. One particular tactic, about which you are not told, is how to make it back to a base with only one engine; that is, without enough power to stay airborne. The solution to this mission-ending problem is to "bunny hop" your helicopter: keep your craft continually pitched forward; disengage, then re-engage, the rotor. When you re-engage the rotor, you will become airborne for a brief while, flying at 50 knots, before coming back to earth. Thus, you can "hop" into the air. Your craft will be seriously damaged when you reach a base, but at least your pilot will not be listed "MIA" or suffer the stigma of abandoning a multimillion-dollar craft.

Another realistic factor you have to get used to is that unlike fighters, Apaches are affected by the recoil of their 30mm Chain Gun and the Hellfire missiles. So, to maintain a level flight, simultaneously fire these weapons while pitching your craft downward. If you fire several Hellfires in a rapid burst, you will have to add even more pressure to stop your craft from soaring upward.

While a high altitude is good for the performance of fighters, it means death for chopper pilots. The Apache's survival depends on flying low and fast, to stay beneath enemy radars. Clever use of the terrain can aid you in sneaking up on a known enemy position. I have found that the best way to handle missions is to maintain an altitude of 900 to 1000 ft., at a ground speed of 125 to 150 knots, and to dash over areas of open terrain to reach the next mountain.

Do not forget that your nose avionics can only "see" what is between you and the horizon; so, to counter the possibility of blundering into a heavily-protected target, put your helicopter into a hover, and "pop up" from behind a hill, to let your onboard systems identify any targets.

This fly-low-and-fast approach also lets you compensate for the limited effective range (just under one kilometre) of the Chain Gun and the 2.75" aerial rockets. These weapons are best used at close range on "AA" and "SAM" units. Sometimes it is best to destroy these air defence units before taking out the main target.

To succeed, remember the above tips, and do not just engage the target assigned to you and then bug out. There are times when you may come across a choice target; it sure would impress your CO, should you have the presence of mind to take out these prime units while you have the chance. Of course, you must also know when not to press your luck; a dead pilot does little for the war effort. Without a doubt, this detailed realism makes Gunship the best combat simulation I have encountered.

Beating the odds:

or how to improve your survival chances on a Gunship Mission

Timothy M. Smith

TITLE: Gunship
82 Challenging New Adventures.
AUTHOR: Dave Prochnow
PRICE: $16.95 Cdn:$12.95 US:
FROM: Tab Books Inc.
Blue Ridge Summit, PA
17294-0214
ISBN: 0-8306-9332-7 (pbk)

Apache helicopter pilots now have some added ordinance. Veteran campaigners and raw rookies who think "autorotation" is turning a circle standing in one place, will benefit from the information contained in Gunship: 82 Challenging New Adventures, by Dave Prochnow. Picking up where Microprose's own excellent documentation left off, Apache flyers should find this work an invaluable "in cockpit companion".

Ten chapters, covering approximately 180 pages, holds a great deal of material. And while that material is presented in a clear and coherent style, there is more here than just "plain vanilla" reading. Like the program which spawned its creation, Prochnow brings to his writing, much of the intensity and excitement of the software program. This has been accomplished in part, through ample use of actual interior and exterior photograhs courtesy of Martin Marietta and Mcdonnell Douglas Helicopters. Numerous line drawings depicting the cockpit instrumentation are employed to illustrate various nuances of rotary winged aviation.

Helicopter buffs will no doubt enjoy the illustrations but these, pictures are not just backdrop to another "see and show" volume of helicopters. The nature of the work is interactive. The emphasis is on doing.

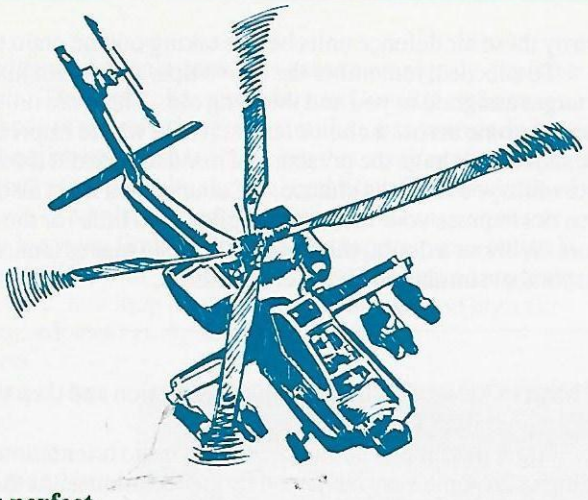
It begins by introducing flight simulators in general and discussing early acheivements such as the Link Trainer. A section on the development of the Apache Gunship prefaces the real heart of the work which is flight instruction and then the books namesake 82 new adventures.

Flight instruction commences with basic orientation leading up to some very advanced flying techniques. At the conclusion of each chapter you are graded on your ability to perform certain manuevers. Perfecting them ALL is definitely a key to mission survival. By the fourth and final chapter in this section you should be an accomplished Gunship pilot.

Once you have passed the solo flight you are ready to test yourself against the 82 historical missions. The author has thoughtfully set up each scenario with a standard presentation format. This permits the different adventures to be set up quickly and flown on the computer without having to constantly refer back to the text. As with the flight instruction, completion of a mission will provide the player with a performance debriefing.

An interesting feature of the book is its ability to allow rudimentary conversion with other helicopter simulators. Using the configuration menus in the Gunship program, Atari ST owners can if they wish, carry out missions with Cosmi's Super Huey 2 or the soon to be released 3d Helicopter Simulator from Sierra On Line. While each of the 82 adventures requires only the Gunsip program, flying these added scenarios is a welcome change from the canned missions in Gunship. A chapter is devoted to adjusting the parameters of Gunship scenarios to other helicopter simulators.

At the conclusion of the book are several appendices. Gunship pilots will find appendix C the most useful reference as it provides photographs and technical specifications for the helicopters you will encounter. A complete index and a glossary with boldface headings round out the work. There is the added bonus of a type in helicopter simulator in basic and I felt this to be of dubious value. Gunship: 82 Challenging New Adventures is a must for those who enjoy the game, or perhaps for those considering buying it. The book may not make you an instant "air ace" but the material presented will definitely increase your chances of survival. Those interested in further reading might want to pick up The Electronic Battlefield by Bob Guerra from Compute Books, $19.95 (Can) or the soon to be released Gunship Academy by Richard G. Sheffield also from the same publisher. ■



Nobody's perfect

Of course no game is "perfect", and there is one thing that takes away from Gunship's realism: once you have located enemy units, and flown back to base to rearm and/or repair your craft, upon your return, those units will be in the exact same location. I somehow doubt that standard Soviet doctrine calls for their armoured units to act like sitting ducks. Possibly, the programmers had to contend with eliminating these features from eight-bit versions, due to limited memory; but surely, when dealing with systems with 512K, there should have been at the very least a feature which would have allowed for unit movement or increased readiness.

Despite this minor limitation, Gunship is, for me, the best product Microprose has ever offered. The strong emphasis on giving the gamer a realistic simulation that provides him with the decisions and challenges that real Apache pilots face--plus the improved graphics to make things look real--all add up to a product that is well worth its modest price--not to mention the wait. In fact, to steal a line from the television commercial, I was so impressed with this product that, rather than simply be satisfied with a free review copy, I went out and bought Gunship, to show my support for a company that has supported my interests in combat simulations. Congratulations to all of those at Microprose who worked on Gunship! My only question is: what will they do for an encore? ■

Keith Burnage is a VTR editor for Canadian Department of National Defence. He began with an Atari 800, to combine his interest in computers with playing historical simulations, and has recently aquired an ST. He is the past director of the NCAUG in Ottawa, and has been reviewing software for the club's newsletter since 1985.

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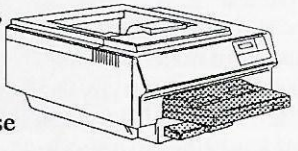

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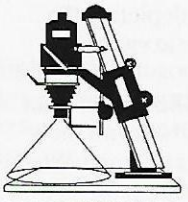

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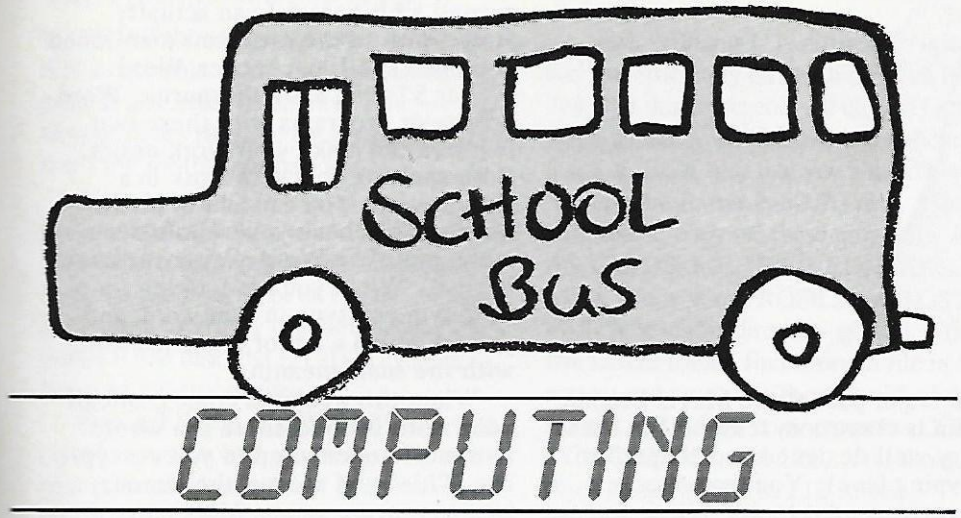


Steve Webb

"Typing" A Step in the Right Direction?

We all know that typing is a very useful skill, but the real question is, should we take the time and learn to type? Will it become essential to earning a living in the future? My opinion is that all people should learn to type. Typing out school reports is easier in many aspects (see last issue), yet we still have the choice between writing it out by hand, or computing it. But is learning to type actually worth our time?

Typing Tutor

If you choose to learn to type, there are a few programs ready and willing to help you in this task. The first ST program that was released was Typing Tutor by First Byte. This program actually has two parts to it. The first is Typing Tutor, with simple down to earth typing instruction. Typing Tutor first shows you which finger(s) each lesson concentrates on. You have a choice of eight lessons that are designed according to the keys used. Within each lesson there are eight pages that guide you through the typing process. When you have finished each page, you are given a speed and error rating. If the rating is not high enough, you must redo the page. At the end of the lesson, there is an exam covering everything presented in the lesson. Once again, you will be given a speed and error rating. But this time, if the rating is not high enough, you must start all over again.

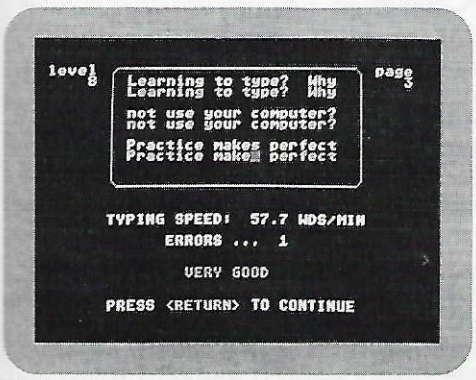
The second part of the program is Word Invaders. Word Invaders is a typing/arcade game that can be easily beaten if you work hard on Typing Tutor. When the program boots, you will be asked to select a level from A to D, with D being the most challenging. You can also select from four typing speeds. Once the game starts, an ugly little ship flies across the top of the screen and spits out some odd words. You start by typing in the words at the top. When a letter or number is typed which is identical to the letter or number your ship is under, you blast it. You try to blow up all the letters before the ship reaches the ground. Again, you are given a typing speed and also a score.

Typing Tutor is a good program as it will teach you to type. But personally, I think that it is too strict, and doesn't allow you much leeway for mistakes. It doesn't give enough help or pointers for the beginner.

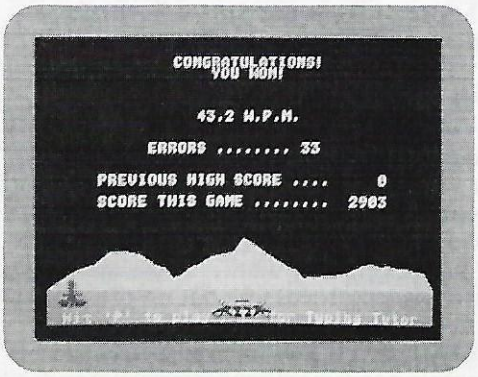
Mavis Beacon Teaches Typing

A much better typing program released by the Software Toolworks is Mavis Beacon Teaches Typing. The program is fantastic. It is set in a classroom where Mavis teaches you to type the right way. In this program you can save your name as a regular user and it will keep a tally of your progress. The great thing about this program is that it first gives you a test and then suggests what lesson would be best to do. If you do not want to do this lesson, you can do something else. Just like Typing Tutor, you are given lessons in the order of the keys you should learn.

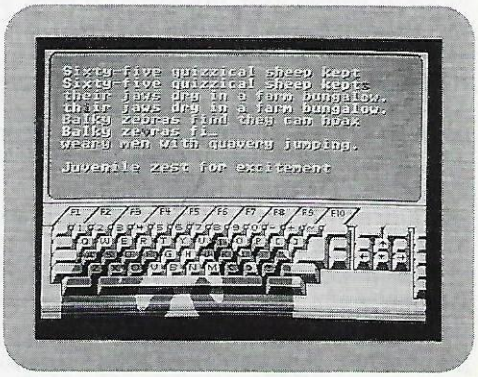
After entering the program, you are asked which sort of user you are; a new user, a regular user or "just browsing". After you've installed a working disk (which can be a real pain), you start with keys A,S,D, and F. You can go through the lesson as many times as you like and it will give you a speed, old record, new record (if any), and other relevant information. The typing screen in the classroom looks



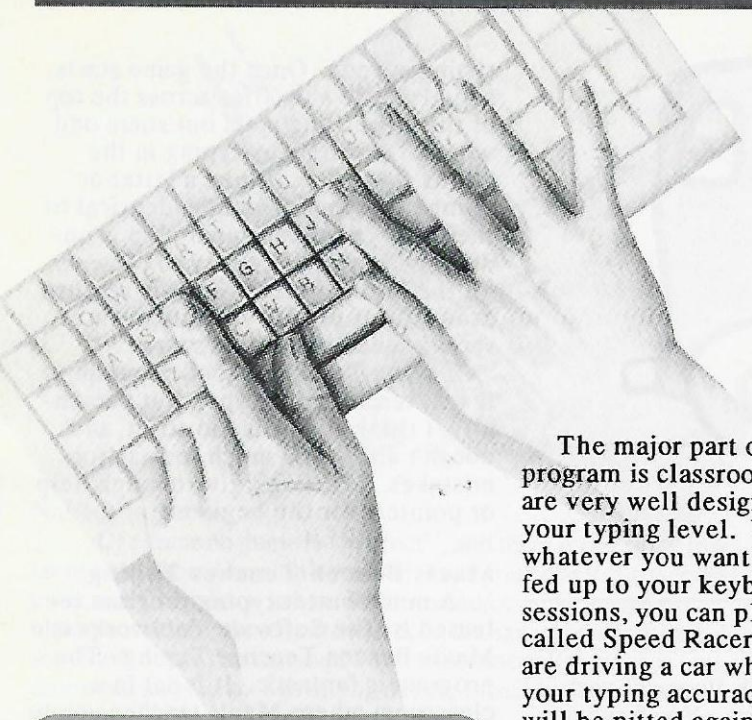
Typing Tutor - a typical lesson

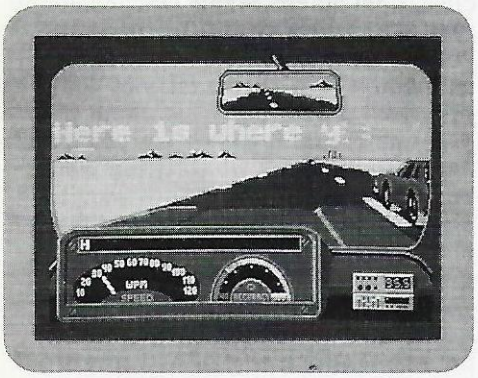


Typing Tutor - Word Invaders Game


Sixty-five quizzical sheep kept
Sixty-five quizzical sheep kepts
their jaws drg in a farm bungalow.
their jaws drg in a farm bungalow.
Baiky zeores find they can hwax
Baiky zevras fi_
weary men with quavery jumping.
Juvenile zest for extitement

Mavis Beacon - a typical lesson





Mavis Beacon - Speed Racer Game

just like a normal keyboard with shadows of hands over the keys. When you hit a key, the shadow presses the same key using the correct hand and finger that you should have used. This will help a bit, but if you really need to see which fingers should press which keys, there is a typing screen available. On this screen you press any key and it will indicate which hand and which finger to use.

One of the best parts of Mavis Beacon is the job simulation. After you have finished the lessons, you are given a job as a secretary. The screen is similar to the classroom typewriter but this also has a timer display. As in the classroom, you see the word you must type in blue above and your cursor in yellow below it. You have to type the letter that is written in blue above and are told, again, your speed and accuracy.

The major part of the Mavis Beacon program is classroom lessons, but these are very well designed and adapted to your typing level. You may choose whatever you want to do. When you are fed up to your keyboard with classroom sessions, you can play a typing game called Speed Racer. In this game, you are driving a car which is propelled by your typing accuracy and speed. You will be pitted against some of the best world racers. In the car, you see a speedometer of words per minute, an accuracy meter, and a typing display window. Through the windshield you can see letters written in the clouds, these are based on the lesson you are currently studying and you must type them. To start your car, you type the letters that are passing in the clouds. You get a speed and an accuracy rating once finished. My only complaint is that it is sometimes difficult to make out the letters and you may fumble.

All together, Mavis Beacon Teaches Typing is a great program and is well worth the time and money. If you choose to learn to type with a program, this would be your best bet.

What to Type?

After you have taken months to learn to type, what do you do with this skill? If you want to use your skill to produce typed documents, buy a word processor and a printer. Both of these could help you in every day work. There are a few great word processors out on the market--some very advanced, and some very basic. If you have just finished learning to type, I would recommend either Word Writer ST or First Word Plus. These programs are fairly basic, but they get the job done. The main feature in both of these is their simplicity. For example, in Word Writer, I can just boot up the program and start typing. With others, I have to doodle around a bit before I can actually start. Both of the programs mentioned contain a spelling checker, Word Writer ST also has a thesaurus. Word processor programs with these two features can make your work easier. Both spelling checkers work in a similar way. You can add or delete words, spellcheck your whole document, etc. The Word Writer thesaurus is great. When you are looking for a synonym you type in that word, and you are given a list of other words with the same meaning.

When the weekend comes, and all your work is done, there is a whole new world opened up to you via typing. This is, of course, the famous text adventure game. Most text games are described as electronic novels. The company best known for producing this kind of game is Infocom. Infocom has made a bundle of games that all work in a similar manner. Once the game has begun, you control your character by typing in instructions of what you want the character to do. If you do something worth while, you will be rewarded with points. If you find you are having trouble with the game (it's too hard to play), you can still test your typing skills on a lower-level Infocom game.

Infocom games have no pictures. If text adventures with pictures are your bag, you might want to look into a Rainbird game. The two most talked about are The Pawn and its sequel, Guild of Thieves. These programs are text adventures with great graphics.

All in all, learning to type is worth your time and effort because of all the doors it opens for you. With the skill of typing at your finger tips you may even be able to conquer alien worlds like school work, adventure games, letters to long-lost relatives, even articles for RESET magazine. ■

Eleven-year old Stephen Webb is one of the new generation of computer enthusiasts who have literally grown up with the machine. Stephen has written a number of reviews for various magazines and spends many hours solving adventure games.

Ross' Ramblings continued from page 31

as much of the compiler system on RAM disk as possible, as this will accelerate the process and make much more efficient use of your time. Here are the configurations that I use for the four packages:

Megamax C - 500K RAM disk with the shell, compiler, linker, editor, and source files. The code improver, librarian, and resource editor are kept on floppy, as they are seldom used. By installing these files on the RAM disk, the E-C-L-R cycle is faster by a factor of five.

Personal Pascal - 600K RAM disk with complete system and source files. If completely installed on a RAM disk, Personal Pascal will compile extremely fast.

Prospero Pascal - 500K RAM disk with complete system and source. This Pascal compiler is not overwhelmingly fast--even on RAM disk--but seems to operate very nicely from this environment. Keep the P-Bench, Probe, and Prolib programs on the floppy disk; install everything else on the RAM disk. Smaller-sized source files will also fit on the RAM disk.

Mark Williams C is difficult to install and use efficiently on anything but a hard disk, but this represents the closest I have come so far. What follows is a rather complicated list of files that you should copy to an extended format (>800K) disk. For the BIN folder, copy the these programs; AR, AS, CC, DB, ME, HELP, LD, MAKE, MSH. Copy your PROFILE and POSTFILE files to this directory as well. For the INCLUDE folder, find every .h file in the system and put it in. There are 25 of them. For the LIB folder, copy programs CC0, CC1, CC2, CC3, and CPP. You should also place these files in the LIB folder; CRTS0.O, CRTSD.O, CRTSG.O, HELPFILE, HELPINDX, LIBAES.A, LIBC.A, LIBM.A LIBVDI.A, MACTIONS, MMACROS, and TOS.SYM. Whew! I have a 360K RAM disk (RDY) configured to come up as well, onto which I place my source code. The RDY program is not on the disk--only the program created by it (in an AUTO folder). Make sure that you edit your PROFILE to reflect where your system and source folders are.

Conclusion

That pretty well covers your options. One program I highly recommend is the RDY RAM disk utility that comes with Mark Williams C. Using RDY, you can create a RAM disk with your compiler system on it and back up the configuration into a single program file. This program file, when placed in your auto folder, boots up with all the programs already on the RAM disk, and is "reset-proof", to boot! It is a very useful utility.

I hope this has helped those of you who have been wondering how to get the most out of your compiler systems. Variations of these techniques will cover most situations. See you next issue! ■

Ross Judson is studying computer science at Carleton University, specializing in management and business. He is very interested in stereo equipment and, of course, computers.

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...Mailbag continued from page 5

problem to a friendly, sympathetic and knowledgable person, who kindly told me to send it back for a modification. I included a video tape to help describe my problem of over-saturated blues.

Ten days later, I received my Videokey, along with my video tape, and a personal letter thanking me for my description and co-operation. P.S. also taped some pictures onto my video tape after their modifications for me to see. The next day at work, their product service rep. called me to follow up on the problem. He asked if I had received the Videokey, and if I was satisfied. He also stressed that if there are any other problems to call right away so they could help out.

I cannot remember ever getting this V.I.P. service from any company before. Practical Solutions is a first class, professional, customer-oriented organization who really cares about the consumer. I would recommend their products and services without reservation, and their support of the Atari ST is a benefit for all of us--they deserve our support. Thanks to P.S. for their help and sincerity.

Barry Summer,
Brooklyn, NY.

Caring about the consumer is what it's all about, and it certainly seems that Practical Solutions does care. Such service is what reputations are built from.

Memory Upgrades

The following messages were extracted from discussions on the RESET Bulletin Board System at (613) 723-8838.

I've heard from many people that the 520ST is expandable to 4 megabytes. Is this true, and how much would it cost?

Chris Samojlenko,
Ottawa, ON.

Am I correct in the statement that the ST's MMU cannot handle more than 4 megabytes?

Jonathon Longman,
Ottawa, ON.

Would it not be possible to use cells for additional memory (as many MS-DOS computers do), or use a bank-switching technique (like the 130XE)?

Paul Bonnette,
Toronto, ON.

Sure, but that would mean that the ease of a linear address space would be gone. The programs would have to know about the bank-switching scheme and behave properly. This is essentially what is done on PCs with expanded memory, and that's why most programs can't use the expanded memory. The best solution would be a new MMU, which would handle more than 4 megabytes.

Eric Rosenquist,
Kanata, ON.

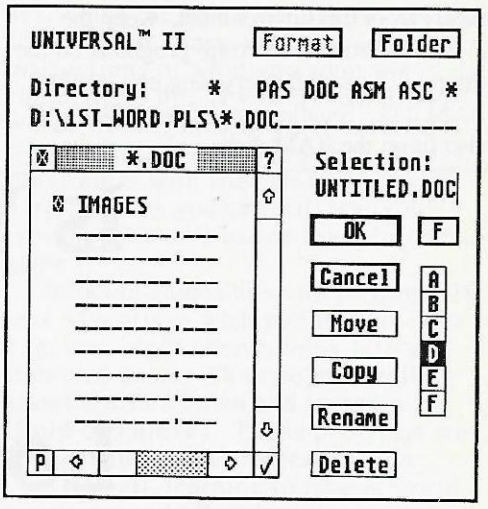
There are several commercial RAM upgrades available, but these generally don't come with the necessary RAM chips (due to their fluctuating cost)--you must purchase them separately. Right now, RAM prices are very high, and upgrading costs almost as much as buying a Mega!

Besides the cost of RAM, there is another problem with upgrading memory. Adding RAM also requires more power-- therefore, you must ensure that the ST power supply is capable of powering the extra memory.

...Universal Item selector continued on page 15

your desired quick extenders and sort sequence.

A concern with the first version was the potential for loosing data when name conflicts occurred. Now the Universal won't let you move or copy a file to itself. On a name conflict you can change the name, skip to the next file, or cancel the operation entirely. It's actually safer than the desktop. There's so much more, like hiding and "touching" (resetting date and time) files, or changing the extension to * by clicking on the word "Selection" (or to *.* by double-clicking). You even get a count of folders and files being operated on. And, if you drag a group of files to the question mark, the Universal tells you not only how many bytes are used, but how many are really needed (since files use space in multiples of 1024 bytes). Very handy when moving files around.



I even found a couple of features that aren't documented. Clicking on the question mark in the upper right hand corner of the window shows available free RAM as well as disk information. You can also add a disk label name if one doesn't exist (but you can't change it once its written).

All of this takes 8.5K more memory than the old version. A & D Software have also raised the price by $5 U.S. to $19.95. In both cases, a small price to pay. Get the Universal Item Selector version 2, you won't be sorry. ■

Bob Deskin has been working with computers of all sizes for over 15 years. He became an avid STer over two years ago and can honestly say that he watches his monitor more than his TV.

BYTE

THE HAND THAT FEEDS YOU

Terry Webb

A 'baudy' tale in which our author attempts to comprehend the visceral workings of his latest acquisition and answer the question, "Have I reached the party to whom I am up-loading?"

Telecommunications is something like training a seal to roll over--after hours of hard work and patience, when it finally happens, who cares? I have heard about E-mail until I want to go looking for the E-toilet. Telephones give us instant communication over any distance, but we feel the need to tie the phone line to a computer so that the spoken word can be painfully typed and sent to reside in some far-off memory for days, until the person it was addressed to finally gets around to looking for it.

To really understand this insane offshoot of computers, a guided tour is necessary. Before you can telecommunicate, you need a modem, cable and software. Modem comes from the Latin ''modemus'' meaning 1200 baud is never enough. Modems can be either internal or external. Internal means that they are inside the case the computer is in, and external means they are inside the case the modem is in. An external modem has a cable to attach it to the computer and an internal one does not. That's why you need the cable. It's there to give you another way of telling the two types apart (although some people claim that the two types of modem are those that work and those that *don't*).

The third thing you need is software, just like any other program that you use. That's a funny thing about computers, programs are almost useless without software. Programs for modems are often called ''Something-Term'' or ''Something-Talk'', and never come with enough documentation. I could never figure out why a ditzy little word processor that does nothing more than put what you *type* up onto the screen needs a 200 page manual, while a program that lets you talk to the world in any language you choose only needs 9 pages of photocopied instructions. Of course, after reading the word processor manual, at least you can use the program. Word processors only work in words, while telecommunication software works in bauds. That takes a lot more programming but takes up almost no manual.

Some people claim that the two types of modem are; those that work and those that *don't*

Perhaps I should explain bauds. Bauds are little blue things about half as long as your fingernail that chew on telephone wires. The more bauds you have, the more they chew and the slower things will go through the wires. There are also white bauds that speed things up, but they are only ever seen on TV commercials. Anyway, these blue bauds come in packages of 150, 300, 1200 or 2,134,576 none of which are really useful. The only way that you can tell if you have bauds loose in the house is to look at the telephone cord. If the curly thing between the handset and the phone is all twisted, then you have all kinds of bauds. Rush out and buy a computer, modem, and telephone.

Modems and telecommunicating are of no use unless you can access a bulletin board. These are computers and modems and cables and software that are set up to terrorize you. They are always run by some guy with the name ''Sysop''. His job is to construct a series of menus and files, that are so complex and confusing, that no one can find anything. Bulletin board numbers are only available to a select few (known as the ''Brotherhood of the Dipswitch''), and are only publicised on other bulletin boards. The trick is to find out that first number so that you can find all the others. Of course, there are some numbers that are freely distributed, but these are really lines that the phone company uses to test how many times a normal phone can ring busy before it seizes.

It gets worse--assuming you are successful in getting up on a board, you first have to take a test that will ask you questions about almost everything that you do in the privacy of your own garage. If

you pass (or fail?), then you become a registered user that allows you to use a number instead of reading the opening questions about name and password. These names that you can use are something like the "handles" that the CBr's used in the heyday of the CB radio. I am sure that "Midnight Marauder" is really a very nice family man and does not have the sexual preferences that he claims.

Assuming that everything is in order, and you have no insanity in the family or your great aunt was really acquitted, you are then allowed to enter the Main Menu Area. Everything here is very straight forward with the first letter of each choice being used as the key. Good, (F) for Files.

If the curly thing between the handset and the phone is all twisted, then you have all kinds of bauds.

Then we can (B)rowse, (U)pload, (D)ownload, (C)hange Area, or (P)anic. This is terrible. There is no command (W)here am I? If I don't know what the areas are, how can I change them? I do know that I want to download files. After all, that's what telecommunicating is all about.

I tell you, this telecommunicating and bulletin board stuff is not for kids. I found lots of picture files and graphics that I thought would be a good idea to have. They must be censored because the only way I could get them was by using an X-modem. I bet I buy one of those at an adult computer store in a plain brown wrapper. ■

Terry Webb is the author of a column carried in a number of user group newsletters, in which he describes the rather confused life of a computer owner and his struggles with a machine that he doesn't really understand.

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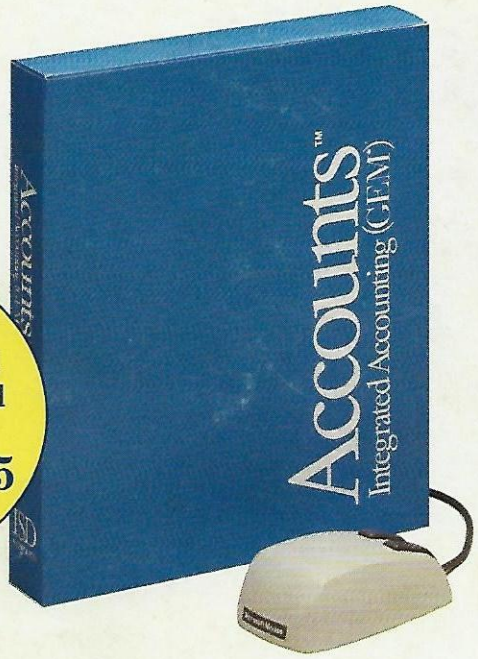

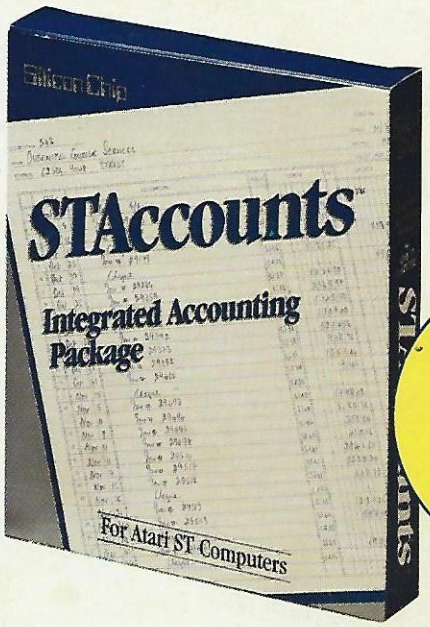

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